

OFFERING CIRCULAR

\$1,000,000,000

**TENNESSEE VALLEY AUTHORITY**

**\$750,000,000 4 $\frac{3}{8}$ % Power Bonds 1993 Series A Due 1996**

**\$250,000,000 5 $\frac{1}{8}$ % Power Bonds 1993 Series B Due 1998**

**Interest Payable March 4 and September 4**

The 4 $\frac{3}{8}$ % Power Bonds 1993 Series A Due 1996 (the "1993 Series A Bonds") and the 5 $\frac{1}{8}$ % Power Bonds 1993 Series B Due 1998 (the "1993 Series B Bonds" and together with the 1993 Series A Bonds, hereinafter collectively referred to as the "Bonds") will be redeemable, in whole only, on not less than 30 days' notice at any time on or after March 4, 1994 at the option of Tennessee Valley Authority ("TVA") at a redemption price equal to 100 percent of the principal amount, plus accrued interest, if any, to the date fixed for redemption. The Bonds will be issued in minimum denominations of \$1,000 and integral multiples thereof in book-entry form through the Federal Reserve Banks. See "Description of Bonds".

TVA is a wholly owned corporate agency and instrumentality of the United States of America. Principal and interest will be payable solely from TVA's Net Power Proceeds as herein defined.

THE BONDS WILL NOT BE OBLIGATIONS OF, NOR WILL PAYMENT OF THE PRINCIPAL THEREOF OR THE INTEREST THEREON BE GUARANTEED BY, THE UNITED STATES OF AMERICA. THE BONDS ARE NOT REQUIRED TO BE REGISTERED UNDER THE SECURITIES ACT OF 1933. ACCORDINGLY, NO REGISTRATION STATEMENT HAS BEEN FILED WITH THE SECURITIES AND EXCHANGE COMMISSION. TVA IS NOT SUBJECT TO THE PERIODIC REPORTING REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934.

	Price to Public(1)	Discount to Underwriters(2)	Proceeds to TVA(3)
Per 1993 Series A Bond .....	99.487%	0.150%	99.337%
Total .....	\$746,152,500	\$1,125,000	\$745,027,500
Per 1993 Series B Bond .....	98.750%	0.200%	98.550%
Total .....	\$246,875,000	\$500,000	\$246,375,000

(1) Plus accrued interest, if any, from March 4, 1993, to the date of delivery.

(2) TVA has agreed to indemnify the Underwriters against certain civil liabilities. See "Underwriters".

(3) Before deducting expenses payable by TVA estimated at \$50,000.

The Bonds offered by this Offering Circular are offered by the several Underwriters of each series of Bonds subject to prior sale, withdrawal, cancellation or modification of the offer without notice, to delivery to and acceptance by the Underwriters of each series of Bonds and to certain further conditions. It is expected that delivery of the Bonds, in book-entry form, will be made through the book-entry system of the Federal Reserve Banks on or about March 4, 1993, against payment therefor in immediately available funds.

**LEHMAN BROTHERS**

**THE FIRST BOSTON CORPORATION**

**MORGAN STANLEY & Co.**  
Incorporated

February 25, 1993

No dealer, salesperson or any other person has been authorized by TVA to give any information or to make any representations on behalf of TVA other than those contained in this Offering Circular, the current Information Statement (as hereinafter defined), or any supplement to any of the foregoing prepared by TVA for use in connection with the offer made by this Offering Circular and, if given or made, such information or representations must not be relied upon as having been authorized by TVA. Neither the delivery of this Offering Circular or the current Information Statement nor any sale of Bonds described herein shall under any circumstances create an implication that the information provided herein is correct at any time subsequent to its date. This Offering Circular does not constitute an offer to sell or a solicitation of an offer to buy the Bonds described herein in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

This Offering Circular should be read in conjunction with TVA's current Information Statement, dated December 15, 1992, and any supplement thereto (the "current Information Statement") which is incorporated herein by this reference. Any statement contained in the current Information Statement shall be deemed modified or superseded for all purposes of the current Information Statement and this Offering Circular to the extent that a statement contained in this Offering Circular modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified, to constitute a part of the current Information Statement. Additional copies of this Offering Circular and of the current Information Statement may be obtained upon written request directed to Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902, Attention: Vice President and Treasurer, or by calling (615) 632-3366.

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IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS OF EACH SERIES OF BONDS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF SUCH BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZATION, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

## SUMMARY OF OFFERING

*The information below is qualified in its entirety by the detailed information appearing in TVA's current Information Statement (and any supplement thereto) and elsewhere in this Offering Circular. Capitalized terms used and not defined herein have the meanings defined in such Information Statement and elsewhere in this Offering Circular.*

<b>Issuer</b> .....	TVA is a wholly owned corporate agency and instrumentality of the United States of America established by the Tennessee Valley Authority Act of 1933, as amended.
<b>Securities Offered</b> .....	<p>\$750,000,000 aggregate principal amount of 4¾% Power Bonds 1993 Series A Due March 4, 1996.</p> <p>\$250,000,000 aggregate principal amount of 5¼% Power Bonds 1993 Series B Due March 4, 1998.</p>
<b>Interest</b> .....	The Bonds will bear interest from March 4, 1993, at the annual rates set forth on the cover page hereof, payable semi-annually in arrears on each March 4 and September 4, commencing September 4, 1993.
<b>Redemption</b> .....	The Bonds of each series may be redeemed at TVA's option, in whole only, at any time on or after March 4, 1994 at a redemption price equal to 100 percent of the principal amount plus accrued interest, if any, to the date fixed for redemption (the "Redemption Date").
<b>Fiscal Agent</b> .....	Federal Reserve Banks.
<b>Form of Bonds</b> .....	The Bonds will be issued and maintained and may be transferred by Holders only on the book-entry system of the Federal Reserve Banks. See "Description of Bonds" — "Book-Entry System".
<b>Use of Proceeds</b> .....	The net proceeds received by TVA from the sale of the Bonds will be used together with other funds to refinance debt. See "Use of Proceeds".
<b>Source of Payment</b> .....	The interest and principal on the Bonds are payable solely from Net Power Proceeds and are not obligations of, or guaranteed by, the United States of America. See "The Basic Resolution; Power Bonds and Discount Notes" in the current Information Statement.
<b>Legality of Investment</b> .....	<p>The Bonds described herein:</p> <ul style="list-style-type: none"> <li>• are acceptable as security for all fiduciary, trust, and public funds, the investment or deposit of which shall be under the authority or control of any officer or agency of the United States of America;</li> <li>• are eligible as collateral for Treasury tax and loan accounts;</li> <li>• are among those obligations which national banks may deal in, underwrite and purchase for their own accounts up to ten percent of unimpaired capital and surplus;</li> <li>• are eligible as collateral for advances by Federal Reserve Banks to depository institutions;</li> <li>• are legal investments for federal savings associations and federal savings banks;</li> </ul>

- are eligible as collateral for advances by Federal Home Loan Banks for which the Bonds are legal investments; and
- are legal investments for federal credit unions.

See “Legality of Investment”.

**Taxation** ..... Interest on the Bonds is subject to various tax consequences. See “Tax Matters”.

**CUSIP Numbers** ..... 1993 Series A Bonds 880591 BS0  
1993 Series B Bonds 880591 BT8

## **TENNESSEE VALLEY AUTHORITY**

TVA is a wholly owned corporate agency and instrumentality of the United States of America established pursuant to the Tennessee Valley Authority Act of 1933, as amended (the "Act"). TVA's objective is to develop the resources of the Tennessee Valley region in order to strengthen the regional and national economy and the national defense. The programs of TVA consist of power and nonpower programs. For the fiscal year ending September 30, 1993, TVA received \$135 million in Congressional appropriations from the federal government for the nonpower programs. The power program is required to be self-supporting from revenues it produces. The Act authorizes TVA to issue Evidences of Indebtedness (as such term is defined under "Description of Bonds") that may only be used to finance its power program.

### **USE OF PROCEEDS**

The net proceeds received by TVA from the sale of the Bonds will be used together with other funds to refinance debt relating to TVA's power program.

### **RECENT DEVELOPMENTS**

#### **Financial Results**

The condensed financial statements for the fiscal years ended September 30, 1992 and 1991 have been derived from TVA's audited financial statements. The condensed financial statements for TVA's power program for the three months ended December 31, 1992 and 1991 are unaudited but in the opinion of management of TVA include all adjustments (consisting only of normal recurring adjustments, except for recording in the three months ended December 31, 1992, the effect of changing the amortization/depreciation period of deferred nuclear recovery costs) necessary for the fair presentation of results for such periods. The following information should be read in conjunction with the audited financial statements and notes thereto presented in the current Information Statement. Results for the three months ended December 31, 1992 are not necessarily indicative of results for fiscal year 1993.

**TENNESSEE VALLEY AUTHORITY**  
**(A CORPORATION WHOLLY OWNED BY THE UNITED STATES OF AMERICA)**  
**POWER PROGRAM**  
**CONDENSED BALANCE SHEETS AT DECEMBER 31, 1992 AND SEPTEMBER 30, 1992**

	December 31, 1992	September 30, 1992
	(in Millions)	
ASSETS		
PROPERTY, PLANT, AND EQUIPMENT		
Completed plant . . . . .	\$14,998	\$14,075
Less accumulated depreciation and depletion . . . . .	5,035	4,935
Completed plant, net . . . . .	9,963	9,140
Construction in progress . . . . .	7,966	7,228
Deferred nuclear generating units . . . . .	6,053	6,037
Nuclear fuel and capital lease assets . . . . .	2,471	2,488
Total . . . . .	26,453	24,893
INVESTMENT FUNDS, at accreted cost . . . . .	194	188
CURRENT ASSETS . . . . .	1,662	1,724
DEFERRED CHARGES AND OTHER ASSETS . . . . .	1,348	2,514
Total assets . . . . .	<u>\$29,657</u>	<u>\$29,319</u>
CAPITALIZATION AND LIABILITIES		
CAPITALIZATION		
Proprietary capital		
Appropriation investment, net . . . . .	\$ 683	\$ 688
Retained earnings reinvested in the power program . . . . .	3,166	3,062
Total . . . . .	3,849	3,750
Long-term debt . . . . .	20,186	19,204
Total . . . . .	24,035	22,954
OTHER LIABILITIES . . . . .	2,974	2,993
CURRENT LIABILITIES		
Short-term debt . . . . .	1,301	1,707
Other current liabilities . . . . .	1,347	1,665
Total . . . . .	2,648	3,372
Total capitalization and liabilities . . . . .	<u>\$29,657</u>	<u>\$29,319</u>

**TENNESSEE VALLEY AUTHORITY  
POWER PROGRAM**

**CONDENSED STATEMENTS OF OPERATIONS AND RETAINED EARNINGS**

**For the Three Months Ended December 31, 1992 and 1991,**

**and for the Years Ended September 30, 1992 and 1991**

	Three Months Ended December 31,		Years Ended September 30,	
	1992	1991	1992	1991
	(In Millions)			
<b>OPERATING REVENUES</b>				
Sales of electric energy				
Municipalities and cooperatives .....	\$ 1,059	\$ 1,035	\$ 4,266	\$ 4,272
Federal agencies .....	61	63	255	257
Industries .....	110	123	472	531
Electric utilities .....	—	—	1	8
Other .....	17	16	71	68
Total operating revenues .....	<u>1,247</u>	<u>1,237</u>	<u>5,065</u>	<u>5,136</u>
<b>OPERATING EXPENSES</b>				
Fuel and purchased power, net .....	285	335	1,354	1,379
Other production expense .....	148	152	603	537
Tax-equivalent payments .....	59	60	241	243
Depreciation(1) .....	107	96	390	350
Other(1) .....	119	146	610	538
Total operating expenses .....	<u>718</u>	<u>789</u>	<u>3,198</u>	<u>3,047</u>
<b>OPERATING INCOME</b> .....	<u>529</u>	<u>448</u>	<u>1,867</u>	<u>2,089</u>
<b>OTHER INCOME AND DEDUCTIONS, NET</b> .....	<u>6</u>	<u>5</u>	<u>(87)</u>	<u>24</u>
Total income before interest charges .....	535	453	1,780	2,113
<b>INTEREST CHARGES</b>				
Interest expense .....	428	417	1,695	1,677
Allowance for funds used during construction .....	(9)	(4)	(35)	(73)
Total interest charges .....	<u>419</u>	<u>413</u>	<u>1,660</u>	<u>1,604</u>
Income before cumulative effect of accounting change ...	116	40	120	509
<b>CUMULATIVE EFFECT OF POSTRETIREMENT BENEFITS CHANGE(2)</b> .....	<u>—</u>	<u>—</u>	<u>—</u>	<u>(223)</u>
<b>NET INCOME</b> .....	<u>116</u>	<u>40</u>	<u>120</u>	<u>286</u>
Return on appropriation investment .....	12	14	57	64
Increase in retained earnings reinvested .....	104	26	63	222
Retained earnings reinvested at beginning of period .....	3,062	2,999	2,999	2,777
Retained earnings reinvested at end of period .....	<u>\$ 3,166</u>	<u>\$ 3,025</u>	<u>\$ 3,062</u>	<u>\$ 2,999</u>

(1) Prior to October 1992, TVA classified nuclear recovery costs as a deferred charge and amortized such costs over a ten-year period beginning with the restart of each idled unit. TVA recently determined that the operation of nuclear units returned to service indicates that the recovery actions taken have effectively corrected previous deficiencies such that the units are presently expected to remain in service throughout the remainder of the estimated service lives. Accordingly, effective October 1992, TVA reclassified the \$1,153 million unamortized balance of deferred nuclear recovery costs to completed plant and construction in progress and began depreciating such costs associated with units returned to service over the respective remaining service lives of the nuclear plants. The effect of the change for the three months ended December 31, 1992, was to decrease other operating expense by \$29 million and increase depreciation expense by \$7 million.

(2) See Note 7 to Financial Statements contained in the current Information Statement.

**TENNESSEE VALLEY AUTHORITY  
POWER PROGRAM**

**CONDENSED STATEMENTS OF CASH FLOWS  
For the Three Months Ended December 31, 1992 and 1991,  
and for the Years Ended September 30, 1992 and 1991**

	<b>Three Months Ended December 31,</b>		<b>Years Ended September 30,</b>	
	<b>1992</b>	<b>1991</b>	<b>1992</b>	<b>1991</b>
	(In Millions)			
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>				
Net power income .....	\$ 116	\$ 40	\$ 120	\$ 286
Items not requiring cash .....	127	138	661	618
Other changes, net .....	<u>(331)</u>	<u>(103)</u>	<u>267</u>	<u>128</u>
Net cash provided by (used in) operating activities .....	<u>(88)</u>	<u>75</u>	<u>1,048</u>	<u>1,032</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>				
Construction expenditures .....	(541)	(295)	(1,689)	(1,271)
Other, net .....	<u>115</u>	<u>(304)</u>	<u>(243)</u>	<u>(406)</u>
Net cash used in investing activities .....	<u>(426)</u>	<u>(599)</u>	<u>(1,932)</u>	<u>(1,677)</u>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>				
Borrowings, net .....	570	501	932	910
Other .....	<u>(17)</u>	<u>(19)</u>	<u>(77)</u>	<u>(84)</u>
Net cash provided by financing activities .....	<u>553</u>	<u>482</u>	<u>855</u>	<u>826</u>
Net change in cash and cash equivalents .....	39	(42)	(29)	181
Cash and cash equivalents at beginning of period .....	<u>157</u>	<u>186</u>	<u>186</u>	<u>5</u>
Cash and cash equivalents at end of period .....	<u>\$ 196</u>	<u>\$ 144</u>	<u>\$ 157</u>	<u>\$ 186</u>

**Results of Operations for the Three Months Ended December 31, 1992**

Net power income for the first quarter was \$116 million compared to \$40 million for the same period last year. First quarter operating revenues increased from \$1,237 million to \$1,247 million and kilowatt-hour ("kWh") sales increased over 3 percent to 27.7 billion kWh when compared to last year. The increase reflects an improving economy and continued growth in the region.

Operating expenses for the first quarter decreased by \$71 million when compared to the same period last year. Operating expenses were affected by increased off-system sales which are offset against expenses; more generation from lower cost hydro and nuclear units; and an accounting change related to the amortization of nuclear recovery costs which decreased total operating expenses by \$22 million.

**Liquidity and Capital Resources**

In December 1992, TVA issued \$1.0 billion in 30-year Power Bonds in the public market, using the proceeds principally to retire short-term debt incurred for capital expenditures relating to TVA's power program.

**DESCRIPTION OF BONDS**

**General**

The Bonds are to be issued pursuant to authority vested in TVA by the Act and pursuant to the Basic Tennessee Valley Authority Power Bond Resolution adopted on October 6, 1960, as amended on Septem-



ber 28, 1976, October 17, 1989 and March 25, 1992 (the “Basic Resolution”), and the Supplemental Resolution authorizing the Bonds adopted on November 19, 1992 (the “Supplemental Resolution” and together with the Basic Resolution, the “Resolutions”). TVA has entered into a Fiscal Agency Agreement dated as of October 17, 1989 (the “Fiscal Agency Agreement”), with the Federal Reserve Banks, as fiscal agents (together, the “Fiscal Agent”). The Secretary of the Treasury has approved the time of issuance of, and the maximum rate of interest to be borne by, the Bonds in compliance with Section 15d(c) of the Act. The Bonds represent obligations of TVA payable solely from TVA’s Net Power Proceeds and are not obligations of, or guaranteed by, the United States of America.

The Act authorizes TVA to issue and sell bonds, notes and other evidences of indebtedness (hereinafter collectively referred to as “Evidences of Indebtedness”) to assist in financing its power program and to refund such Evidences of Indebtedness. Evidences of Indebtedness issued pursuant to Section 2.2 of the Basic Resolution designated as Tennessee Valley Authority Power Bonds are hereinafter referred to as “Power Bonds”. The aggregate amount of Evidences of Indebtedness at any one time outstanding is limited to \$30 billion. As of February 24, 1993, TVA had approximately \$24.0 billion of Evidences of Indebtedness outstanding, including \$1.75 billion of debt being defeased under in-substance defeasance arrangements.

The summaries herein of certain provisions of the Act, the Resolutions and the Fiscal Agency Agreement do not purport to be complete and are qualified in their entirety by reference to all the provisions of the Act, the Resolutions and the Fiscal Agency Agreement, copies of which may be obtained upon written request directed to Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902, Attention: Vice President and Treasurer, or by calling (615) 632-3366.

The Bonds will be Power Bonds as defined above and will be payable as to both principal and interest solely from TVA’s Net Power Proceeds, which are defined as the remainder of TVA’s Gross Power Revenues (as defined in the Basic Resolution) after deducting the costs of operating, maintaining, and administering its power properties (including multiple-purpose properties in the proportion that multiple-purpose costs are allocated to power) and payments to states and counties in lieu of taxes, but before deducting depreciation accruals or other charges representing the amortization of capital expenditures, plus the net proceeds of the sale or other disposition of any Power Facility (as defined in the Basic Resolution) or interest therein. The Act also requires TVA to make certain payments to the United States Treasury each year from Net Power Proceeds in excess of those required for debt service as a return on and reduction of the Appropriation Investment (as defined in the Basic Resolution). See “Certain Provisions of the Tennessee Valley Authority Act” — “Payments to the Treasury” in the current Information Statement.

The Bonds rank equally as to the application of Net Power Proceeds with all other Power Bonds. As to the application of Net Power Proceeds, Power Bonds presently rank senior to other Evidences of Indebtedness as to principal and on a parity with or senior to other Evidences of Indebtedness as to interest. At some future date prior to maturity of the Bonds, Evidences of Indebtedness other than Power Bonds may also rank on parity with Bonds as to principal. See “The Basic Resolution; Power Bonds and Discount Notes” — “Amendments to the Basic Resolution to Become Effective in the Future” in the current Information Statement. For a further discussion of the application of Net Power Proceeds, see “Certain Provisions of the Tennessee Valley Authority Act” and “The Basic Resolution; Power Bonds and Discount Notes” — “Application of Net Power Proceeds” in the current Information Statement. There is no limit on other indebtedness or securities which may be issued by TVA and no financial or similar restrictions on TVA, except as provided under the Act, the Basic Resolution and the Supplemental Resolution. See “The Basic Resolution; Power Bonds and Discount Notes” in the current Information Statement.

The Supplemental Resolution provides that, at the option of TVA, additional Bonds may be issued in one or more future installments pursuant to an amendment to the Supplemental Resolution not requiring the consent of holders of Bonds. Additional Bonds so issued shall be identical in all respects with the Bonds offered hereby.

## **Payment of Principal and Interest**

The Bonds will consist of \$750,000,000 aggregate principal amount of 4 $\frac{3}{8}$ % Power Bonds 1993 Series A Due March 4, 1996 and \$250,000,000 aggregate principal amount of 5 $\frac{1}{8}$ % Power Bonds 1993 Series B Due March 4, 1998 (each such maturity date being hereinafter referred to as a "Maturity Date"). The Bonds will be issued in minimum denominations of \$1,000 and integral multiples thereof in book-entry form only through the Federal Reserve Banks as described below under "Book-Entry System". Interest will be payable semi-annually in arrears on March 4 and September 4 (each an "Interest Payment Date") commencing September 4, 1993. Such interest payments will include interest accrued from and including March 4, 1993 or the preceding Interest Payment Date, as the case may be, to but excluding the relevant Interest Payment Date. Interest shall be computed on the basis of a 360-day year of twelve 30-day months. The principal amount of each series of Bonds, together with the interest accrued and unpaid thereon, is due in full on the Maturity Date for such Bonds. Payments of principal and interest on the Bonds will be made on the applicable payment dates to Holders (as such term is defined under "Book-Entry System") of the Bonds which are Holders as of the close of business on the Business Day preceding such payment dates, by credit of the payment amount to the Holders' accounts at the Federal Reserve Banks. The Holder and each other financial intermediary in the chain to the beneficial owner will have the responsibility of remitting payments for the accounts of their customers.

In any case in which an Interest Payment Date, a Redemption Date, or a Maturity Date is not a Business Day, payment of principal or interest, as the case may be, shall be made on the next succeeding Business Day with the same force and effect as if made on such Interest Payment Date, Redemption Date, or Maturity Date. The term "Business Day" shall mean any day other than a Saturday or Sunday or a day on which banking institutions in New York City are authorized or required by law or executive order to be closed.

## **Redemption**

The Bonds of each series offered hereby are subject to redemption at the election of TVA upon not less than 30 days' notice broadcast to each Holder of Bonds of such series on the book-entry system of the Federal Reserve Banks, at any time on or after March 4, 1994, as a whole only, at a Redemption Price equal to 100 percent of the principal amount plus accrued interest, if any, to the Redemption Date.

## **Book-Entry System**

The Bonds will be issued and maintained and may be transferred only on the book-entry system of the Federal Reserve Banks in minimum principal amounts of \$1,000 and additional integral multiples thereof.

The Federal Reserve Banks will issue the Bonds in book-entry form and will maintain book-entry accounts with respect to the Bonds and will make payments, on behalf of TVA, of interest on and principal of the Bonds on the applicable payment dates by crediting Holders' accounts at the Federal Reserve Banks.

The foregoing paragraph is a summary of certain provisions of the Fiscal Agency Agreement and does not purport to be a complete statement of all the provisions of such agreement.

Regulations governing the use of the book-entry system for the Bonds are contained in 18 C.F.R. Part 1314, and such procedures, insofar as applicable, as may from time to time be established by regulations of the United States Treasury Department governing obligations of the United States Treasury are contained in Treasury Department Circular No. 300. These regulations and procedures relate primarily to the registration, transfer, exchange and pledge of such obligations. A copy of Circular No. 300 may be obtained upon request from any Federal Reserve Bank, the Department of the Treasury or TVA. The accounts of holders on the Federal Reserve Banks' book-entry system are governed by applicable operating circulars and letters of the Federal Reserve Banks.

The Bonds may be held of record only by entities eligible to maintain book-entry accounts with the Federal Reserve Banks. Such entities whose names appear on the book-entry records of a Federal Reserve Bank as the entities for whose accounts the Bonds have been deposited are herein referred to as "Holders". A Holder is not necessarily the beneficial owner of a Bond. Beneficial owners will ordinarily hold Bonds through

one or more financial intermediaries, such as banks, brokerage firms and securities clearing organizations. A Holder that is not the beneficial owner of a Bond, and each other financial intermediary in the chain to the beneficial owner, will have the responsibility of establishing and maintaining accounts for their respective customers. The rights of the beneficial owner of a Bond with respect to TVA and the Federal Reserve Banks may be exercised only through the Holder thereof. TVA and the Federal Reserve Banks will have no direct obligation to a beneficial owner of a Bond that is not also the Holder of such Bond. The Federal Reserve Banks will act only upon the instructions of Holders in recording transfers of the Bonds.

## **LEGALITY OF INVESTMENT**

The Bonds are lawful investments and may be accepted as security for all fiduciary, trust and public funds, the investment or deposit of which shall be under the authority or control of any officer or agency of the United States of America. 16 U.S.C. § 831n-4(d).

The Bonds are acceptable as collateral for Treasury tax and loan accounts pursuant to 31 C.F.R. § 203.15(d)(1).

National banks may deal in, underwrite and purchase the Bonds for their own accounts in an amount not to exceed ten percent of unimpaired capital and surplus. 12 U.S.C. § 24, seventh paragraph.

Federal Reserve Banks may accept the Bonds as eligible collateral for advances to depository institutions. 12 U.S.C. § 347 and 12 C.F.R. § 201.108(b)(13).

Federal savings associations and federal savings banks may invest in the Bonds without regard to limitations generally applicable to investments. 12 U.S.C. § 1464(c)(1)(F).

The Bonds are eligible as collateral for advances by Federal Home Loan Banks to federal savings and loan associations, federal savings banks and other members for which the Bonds are legal investments. 12 U.S.C. § 1430(a) and 12 C.F.R. § 935.7(b)(2).

Federal credit unions may purchase the Bonds. 12 U.S.C. § 1757(7)(E).

The Bonds are “obligations of a corporation which is an instrumentality of the United States” within the meaning of Section 7701(a)(19)(C)(ii) of the Internal Revenue Code for purposes of the 60 percent of assets limitation applicable to domestic building and loan associations.

## **TAX MATTERS**

The following discussion describes certain United States federal (and state and local, where specifically noted) income and estate tax consequences of the ownership of the Bonds, without consideration of the particular facts and circumstances of each beneficial owner’s situation. The rules described below and their application to the Bonds are subject to change. Thus, each prospective beneficial owner and any other person or entity may neither construe as legal advice nor rely on the following discussion but rather each is urged to consult its own tax advisor with respect to United States federal and state tax consequences associated with ownership of a Bond, as well as any consequences arising under the laws of any other taxing jurisdiction.

For purposes of this discussion, “U.S. Person” means a citizen or resident of the United States, or a corporation or partnership organized in or under the laws of the United States or any political subdivision thereof, or an estate or trust the income of which is includible in gross income for United States tax purposes regardless of its source. The term “U.S. beneficial owner” includes any U.S. Person which is a beneficial owner of a Bond and any person which is a beneficial owner of a Bond to the extent that the income attributable to such Bond is effectively connected with the person’s conduct of a United States trade or business.

## **U.S. Beneficial Owners**

A U.S. beneficial owner is subject to federal income taxation on income on a Bond, and there is no special exemption for a Bond from United States federal estate and gift tax. The Act, however, provides that the Bonds are exempt both as to principal and interest from all taxation now or hereafter imposed by any state or local taxing authority except estate, inheritance and gift taxes. This exemption might not extend to franchise or other non-property taxes in lieu thereof imposed on corporations or to gain or loss realized upon the sale or exchange of a Bond.

Upon a sale or exchange of a Bond, a U.S. beneficial owner generally will recognize capital gain or loss equal to the difference between the amount realized on the sale or exchange and the beneficial owner's adjusted basis for the Bond.

If a U.S. beneficial owner purchases a Bond for less than its stated redemption price at maturity, in general, that difference will be market discount (unless the discount is less than  $\frac{1}{4}$  of 1% of the stated redemption price at maturity of the Bond multiplied by the number of complete years remaining to maturity). In general, under the market discount rules, unless the U.S. beneficial owner elects to accrue market discount in income currently, any gain on a disposition of a market discount Bond will be ordinary income to the extent of accrued market discount, and deductions for a portion of the interest on any indebtedness incurred or continued to purchase or carry the Bond may be deferred.

A U.S. beneficial owner who purchases a Bond for an amount greater than the amount payable at maturity of the Bond may elect to amortize the bond premium. In the case of a U.S. beneficial owner that makes an election to amortize bond premium or has previously made an election that remains in effect, amortizable bond premium on a Bond generally will be treated as a reduction of the interest income on a Bond on a constant yield basis (except to the extent regulations may provide otherwise) over the term of the Bond. The basis of a debt obligation purchased at a premium is reduced by the amount of amortized bond premium. An election to amortize bond premium will apply to certain other debt instruments acquired at a premium by a U.S. beneficial owner and may have different tax consequences depending on when the debt instruments were issued or acquired. A U.S. beneficial owner should consult a tax advisor before making that election.

## **Non-U.S. Beneficial Owners**

Generally, a non-U.S. beneficial owner will not be subject to United States federal income taxation on interest on a Bond. To qualify for the exemption from taxation, the last U.S. Person in the chain of payment prior to payment to a non-U.S. beneficial owner (the "Withholding Agent") must have received in the year in which such a payment occurs, or in either of the two preceding years, a statement that (i) is signed by the beneficial owner under penalties of perjury, (ii) certifies that such owner is not a U.S. beneficial owner, and (iii) provides the name and address of the beneficial owner. The statement may be made on an Internal Revenue Service Form W-8 or substantially similar substitute form, and the beneficial owner must inform the Withholding Agent of any change in the information on the statement within 30 days of such change. If a Bond is held through a securities clearing organization or certain other financial institutions, the organization or institution may provide a signed statement to the Withholding Agent. However, in such case, the signed statement must be accompanied by a copy of a Form W-8 or substitute form provided by the beneficial owner to the organization or institution holding the Bond on behalf of the beneficial owner.

Generally, any amount which constitutes capital gain to a non-U.S. beneficial owner upon retirement or disposition of a Bond will not be subject to federal income taxation in respect of such amount. Certain exceptions may be applicable and an individual non-U.S. beneficial owner should consult a tax advisor.

The Bonds will not be includible in the federal estate of a non-U.S. beneficial owner.

## **Backup Withholding**

Backup withholding of United States federal income tax at a rate of 31 percent may apply to payments made in respect of the Bonds to beneficial owners who are not exempt recipients and who fail to provide certain identifying information (such as the beneficial owner's taxpayer identification number) in the manner

required. Generally, individuals are not exempt recipients, whereas corporations and certain other entities generally are exempt recipients. Payments made in respect of the Bonds to a U.S. beneficial owner must be reported to the United States Internal Revenue Service, unless such U.S. beneficial owner is an exempt recipient or establishes an exemption. Compliance with the identification procedures (described in the preceding section) would establish an exemption from backup withholding for those non-U.S. beneficial owners who are not exempt recipients.

In addition, upon the sale of a Bond to (or through) a broker, the broker must withhold at a rate of 31 percent of the reportable payment, unless either (i) the broker determines that the seller is a corporation or other exempt recipient or (ii) the seller provides, in the required manner, certain identifying information and, in the case of a non-U.S. beneficial owner, certifies that such seller is a non-U.S. beneficial owner (and certain other conditions are met). Such a sale must also be reported by the broker to the United States Internal Revenue Service, unless either (i) the broker determines that the seller is an exempt recipient or (ii) the seller certifies its non-U.S. status (and certain other conditions are met). Certification of the beneficial owner's non-U.S. status usually would be made on Form W-8 under penalties of perjury, although in certain cases it may be possible to submit other documentary evidence. The term broker generally includes all persons who, in the ordinary course of a trade or business, stand ready to effect sales made by others, as well as brokers and dealers registered as such under the laws of the United States or a state. These requirements generally will apply to a United States office of a broker, and the information reporting requirement generally will apply to a foreign office of a United States broker, as well as to a foreign office of a foreign broker (i) who is a controlled foreign corporation within the meaning of Section 957(a) of the Internal Revenue Code or (ii) 50 percent or more of whose gross income from all sources for the 3-year period ending with the close of its taxable year preceding the payment (or for such part of the period that the foreign broker has been in existence) was effectively connected with the conduct of a trade or business within the United States.

Generally, any amounts withheld under the backup withholding rules from a payment to a beneficial owner would be allowed as a refund or a credit against such beneficial owner's United States federal income tax.

## UNDERWRITERS

The Underwriters for each series of Bonds have severally agreed to purchase from TVA the following respective principal amounts of Bonds of each series:

<u>Underwriters</u>	<u>Principal Amount</u>	
	<u>1993 Series A Bonds</u>	<u>1993 Series B Bonds</u>
Shearson Lehman Brothers Inc.....	\$438,400,000	\$ 84,000,000
The First Boston Corporation .....	67,050,000	83,000,000
Morgan Stanley & Co. Incorporated .....	67,050,000	83,000,000
Bank of America NT&SA .....	10,000,000	
J. C. Bradford & Co. ....	10,000,000	
Chemical Securities, Inc. ....	10,000,000	
Citicorp Securities Markets, Inc. ....	10,000,000	
A.G. Edwards & Sons, Inc. ....	10,000,000	
First Chicago Capital Markets, Inc. ....	10,000,000	
First Tennessee Bank N.A. ....	10,000,000	
Kidder, Peabody & Co. Incorporated .....	10,000,000	
The Nikko Securities Co. International, Inc. ....	10,000,000	
Nomura Securities International, Inc. ....	10,000,000	
PaineWebber Incorporated .....	10,000,000	
Prudential Securities Incorporated .....	10,000,000	
Smith Barney, Harris Upham & Co. Incorporated .....	10,000,000	
M. R. Beal & Company .....	2,500,000	
Commerzbank Capital Markets Corporation .....	2,500,000	
Craigie Incorporated .....	2,500,000	
Doley Securities, Inc. ....	2,500,000	
Fuji Securities Incorporated .....	2,500,000	
Grigsby Brandford & Co., Inc. ....	2,500,000	
McDonald & Company Securities, Inc. ....	2,500,000	
Morgan Keegan & Company, Inc. ....	2,500,000	
NationsBanc Capital Markets, Inc. ....	2,500,000	
Piper Jaffray Inc. ....	2,500,000	
Pryor, McClendon, Counts & Co., Inc. ....	2,500,000	
Rauscher Pierce Refsnes, Inc. ....	2,500,000	
Redwood Securities Group, Inc. ....	2,500,000	
The Robinson-Humphrey Company, Inc. ....	2,500,000	
Muriel Siebert & Co., Inc. ....	2,500,000	
Tucker Anthony Incorporated .....	2,500,000	
Utendahl Capital Partners, L.P. ....	2,500,000	
Vining-Sparks IBG .....	2,500,000	
Wheat, First Securities, Inc. ....	2,500,000	
Total .....	<u>\$750,000,000</u>	<u>\$250,000,000</u>

The respective Underwriting Agreements for the Bonds provide that the several obligations of the Underwriters named therein to pay for and accept delivery of the Bonds are subject to certain conditions. The Underwriters of each series of Bonds are obligated to take and pay for all Bonds of such series if any are taken.

The Underwriters of each series of Bonds have advised TVA that they propose to offer all or part of the Bonds of such series directly to the public initially at the offering prices set forth on the cover page of this Offering Circular and to dealers at such prices less a concession not in excess of .125% of the principal amount of the 1993 Series A Bonds and .150% of the principal amount of the 1993 Series B Bonds. The Underwriters of the respective Bonds may allow and such dealers may realow discounts not in excess of .100%

of the principal amount of the 1993 Series A Bonds and .125% of the principal amount of the 1993 Series B Bonds to certain other dealers. After the initial offering, the public offering prices and concessions may be changed.

TVA has agreed that it will not without the prior consent of the Underwriters of each series of the Bonds, offer, sell or otherwise dispose of any of its debt securities with maturities of 5 years or less (other than the Bonds and TVA's discount notes) on or prior to March 4, 1993, or such later date as the closing of the sale of the Bonds shall occur.

Each series of the Bonds is a new issue of securities with no established trading market. TVA has been advised by the Underwriters of each series of Bonds that they intend to make a market in such series of Bonds, but the Underwriters of such Bonds are not obligated to do so and may discontinue market making at any time without notice. No assurance can be given, however, as to whether a trading market in the Bonds will develop or as to the liquidity of any trading market for the Bonds.

TVA has agreed to indemnify the Underwriters of each series of Bonds against certain civil liabilities.

### VALIDITY OF BONDS

The validity of the Bonds will be passed upon for TVA by Edward S. Christenbury, Esq., General Counsel of TVA, and for the Underwriters of each series of Bonds by Mudge Rose Guthrie Alexander & Ferdon, 180 Maiden Lane, New York, New York 10038.

\* \* \* \* \*

Any statements in this Offering Circular involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Offering Circular is not to be construed as a contract or agreement with the purchaser of any of the Bonds.

TENNESSEE VALLEY AUTHORITY

By:           /s/ KATHY J. WHITE            
Kathy J. White  
*Vice President and  
Treasurer*

February 25, 1993

## **INFORMATION STATEMENT**

# **TENNESSEE VALLEY AUTHORITY**

**A Wholly Owned Corporate Agency  
and Instrumentality of the**

**UNITED STATES OF AMERICA**

The Tennessee Valley Authority ("TVA" or "Corporation") presents this Information Statement ("Statement") for the information of potential purchasers of its Power Bonds (the "New Power Bonds") and Discount Notes to be issued pursuant to authority vested in TVA by the Tennessee Valley Authority Act of 1933, as amended (the "Act"), and the Basic Tennessee Valley Authority Power Bond Resolution adopted by the Board of Directors of TVA (the "Board") on October 6, 1960, as amended on September 28, 1976, October 17, 1989, and March 25, 1992 (the "Basic Resolution").

TVA may from time to time offer New Power Bonds and may offer on a continuous basis Discount Notes for sale by direct placements, through selected investment dealers, dealer banks, underwriters, or underwriting syndicates as TVA deems appropriate. Information concerning particular offerings of New Power Bonds or Discount Notes will be described in an appropriate offering circular and in any supplement thereto. This Statement, and any supplement hereto, should be read in conjunction with the offering circular and any supplement thereto for the particular New Power Bonds or Discount Notes being offered.

This Statement will be updated by supplements or replaced from time to time to reflect annual financial results of the Corporation and as otherwise determined appropriate by the Corporation. Any provisions herein modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Statement. Additional copies of this Statement may be obtained upon written request directed to Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902, Attention: Vice President and Treasurer, or by calling (615) 632-3366.

No salesperson, dealer or other person has been authorized to give any information or to make any representations not contained herein or in a specific offering circular or supplement approved by TVA, and, if given or made, such information or representation must not be relied upon as having been authorized by TVA. This Statement and any offering circular or supplement do not constitute an offer to sell or a solicitation of any offer to buy any of the New Power Bonds or Discount Notes offered hereby in any jurisdiction to any person to whom it is unlawful to make such offer in such jurisdiction. The delivery of this Statement and any offering circular or supplement at any time does not imply that the information given herein or therein is correct at any time subsequent to its respective date.

**THE NEW POWER BONDS AND DISCOUNT NOTES OF TVA WILL NOT BE OBLIGATIONS OF, NOR WILL PAYMENT OF PRINCIPAL THEREOF OR ANY INTEREST THEREON BE GUARANTEED BY, THE UNITED STATES OF AMERICA. PRINCIPAL AND INTEREST, IF ANY, WILL BE PAYABLE SOLELY FROM TVA'S NET POWER PROCEEDS AS HEREIN DEFINED. THE NEW POWER BONDS AND DISCOUNT NOTES ARE NOT REQUIRED TO BE REGISTERED UNDER THE SECURITIES ACT OF 1933. ACCORDINGLY, NO REGISTRATION STATEMENT HAS BEEN, AND NONE WILL BE, FILED WITH THE SECURITIES AND EXCHANGE COMMISSION. TVA IS NOT SUBJECT TO THE PERIODIC REPORTING REQUIREMENTS OF THE SECURITIES EXCHANGE ACT OF 1934.**

This Statement describes the business and operations of TVA as of its date and the financial condition of TVA as of the date of the financial statements included herein. Recipients of this Statement should retain it for future reference until such time as a subsequent Statement is made available by TVA, but delivery or retention of this Statement after the date hereof shall not create any implication that the information provided herein is correct at any time after the date hereof.

**The date of this Information Statement is December 15, 1992.**



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## **THE TENNESSEE VALLEY AUTHORITY**

TVA is a wholly owned corporate agency and instrumentality of the United States established by the Act with the objective of developing the resources of the Tennessee Valley region in order to strengthen the regional and national economy and the national defense. Its specific purposes include providing: (1) an ample supply of power within an area of 80,000 square miles; (2) a modern navigable channel for the Tennessee River; (3) flood control on the Tennessee River and its tributaries, and assistance to flood control on the lower Ohio and Mississippi Rivers; (4) development and introduction of more efficient soil fertilizers; and (5) greater agricultural and industrial development and improved forestry in the Tennessee Valley region.

TVA's programs fall into two types of activities — the power program and the nonpower programs. Substantially all TVA revenues and assets are attributable to the power program. Most of the funding for TVA's nonpower programs, like similar services provided by the federal government in other regions of the country, is provided by Congressional appropriations. Additional funds are obtained for financing certain nonpower activities from various revenues and user fees associated with nonpower activities. For the fiscal year ended September 30, 1992, TVA received \$135 million in Congressional appropriations from the federal government for the nonpower programs. TVA has also received \$135 million in Congressional appropriations for the fiscal year ending September 30, 1993. The power program is required to be self-supporting from revenues it produces. Financial accounts for the two types of TVA activities — power and nonpower — are kept separately. Proceeds from the sale of TVA's bonds, notes, and other evidences of indebtedness, including New Power Bonds and Discount Notes (collectively "Evidences of Indebtedness"), may be used only for the power program.

TVA is authorized by the Act to issue Evidences of Indebtedness to assist in financing its power program in an amount not exceeding \$30 billion outstanding at any one time. At September 30, 1992, outstanding Evidences of Indebtedness aggregated \$23.3 billion, including \$2.1 billion of Power Bonds that are being redeemed under in-substance defeasance arrangements.

Congress has reserved the right to alter, amend or repeal the Act, but has provided that no amendment or repeal shall operate to impair the obligation of any contract made by TVA in the exercise of any power conferred by the Act.

### **TVA'S STATUS AS A U.S. GOVERNMENT CORPORATION**

TVA is, and has been since its inception, a wholly owned corporate agency and instrumentality of the United States of America.

TVA is administered by the Board, which is composed of three persons appointed by the President and confirmed by the Senate. Appointments are for nine-year staggered terms with one term expiring with each three-year interval. The Board has sole authority for determining the rates which TVA charges for power. The Act requires the Corporation to charge rates for power which, among other things, will produce gross revenues sufficient to provide funds for operation, maintenance, and administration of its power system; payments to states and counties in lieu of taxes; debt service on outstanding Evidences of Indebtedness, including provision and maintenance of reserve funds and other funds established in connection therewith; and annual payments to the U.S. Treasury (the "Treasury") in repayment of and as a return on the government's appropriation investment in TVA power facilities. See "The Basic Resolution; Power Bonds and Discount Notes". Such appropriation investment totaled \$688 million as of September 30, 1992. See "Certain Provisions of the Tennessee Valley Authority Act" — "Payments to the Treasury".

TVA is required annually to file with the President and with the Congress a financial statement and a complete report as to the business of the Corporation. The Comptroller General of the United States is authorized to periodically audit the transactions of TVA.

Under certain conditions, TVA may borrow from the Treasury up to \$150 million for a period of one year or less. Any issuance by TVA of Evidences of Indebtedness with a term of one year or longer is subject to the approval of the Secretary of the Treasury as to the issue date and maximum interest rate. The borrowing

authority of TVA is treated as budget authority by the Office of Management and Budget for purposes of the budget of the United States.

During the period of 1960 to 1974, TVA issued Evidences of Indebtedness in the public markets. Beginning in 1974, with the exception of its borrowings from the Treasury, TVA borrowed solely from the Federal Financing Bank (the "FFB"). Pursuant to the Federal Financing Bank Act of 1973, Congress established the FFB under the general direction and supervision of the Secretary of the Treasury. The purpose of the FFB is to coordinate the market financing of federal agencies and, accordingly, it is authorized to purchase obligations issued, sold or guaranteed by any federal agency. TVA reentered the public markets for long-term debt in October 1989 and for short-term borrowings in August 1991. See "Financing Arrangements".

Income on Evidences of Indebtedness issued by TVA is subject to various federal tax consequences. Under the Act, Evidences of Indebtedness are exempt both as to principal and interest from all taxation now or hereafter imposed by any state or local taxing authority except estate, inheritance and gift taxes.

### **FINANCING ARRANGEMENTS**

In September 1989, TVA announced, based on discussions with the Treasury, that it would access the public markets to effect refinancing of its high coupon debt. The FFB advised TVA that FFB policy does not permit federal agencies accessing public markets financing to freely access FFB financing. However, for a period of two years thereafter, the FFB provided a short-term facility of \$2 billion for working capital purposes. That short-term borrowing arrangement with the FFB expired in October 1991. In August 1991, TVA began selling Discount Notes to meet its short-term financing needs. The FFB will continue to make available up to \$2.5 billion of financing for TVA's nuclear fuel lease arrangement with Seven States Energy Corporation ("SSEC") until October 1993. TVA presently estimates that \$2.3 billion will be outstanding under such facility and, at some point prior to October 1993, this amount will be financed through some other arrangements which may include the issuance of Evidences of Indebtedness. See "Nuclear Power Program" — "Nuclear Fuel".

## SELECTED FINANCIAL DATA

The following selected financial data of TVA's power program for the fiscal years 1988 through 1992 have been summarized or derived from TVA's audited financial statements. These data should be read in conjunction with the audited financial statements and notes thereto presented elsewhere herein.

### Condensed Statement of Earnings (Dollars in Millions)

	Fiscal Year Ended September 30				
	1992	1991	1990	1989	1988
Operating Revenues .....	\$ 5,065	\$ 5,136	\$ 5,339	\$ 5,287	\$ 5,322
Operating Expenses .....	3,198	3,047	3,221	3,203	3,450
Operating Income .....	1,867	2,089	2,118	2,084	1,872
Other Income and Deductions .....	(87)	24	(1,138) (1)	61	(155)
Income Before Interest Charges .....	1,780	2,113	980	2,145	1,717
Interest Expense .....	1,695	1,677	1,670	1,842	1,829
Allowance for Funds					
Used During Construction .....	(35)	(73)	(303)	(256)	(525)
Net Interest Charges .....	1,660	1,604	1,367	1,586	1,304
Income (Loss) before cumulative effect of accounting change .....	120	509	(387)	559	413
Cumulative effect of postretirement benefits change (2) .....	—	(223)	—	—	—
Net Income (Loss) .....	\$ 120	\$ 286	\$ (387) (1)	\$ 559	\$ 413
Ratio of Earnings to Fixed Charges (Unaudited) (3) ..	1.07	1.17	0.77	1.30	1.23

### Condensed Balance Sheet (Dollars in Millions)

	September 30				
	1992	1991	1990	1989	1988
<b>Assets</b>					
Property, Plant, and Equipment .....	\$24,893	\$23,871	\$22,909	\$21,477	\$20,618
Investment Funds .....	188	170	297	263	922
Current Assets .....	1,724	1,816	1,231	1,333	1,194
Deferred Charges and Other Assets .....	2,514	2,164	2,035	2,901	3,090
<b>TOTAL ASSETS .....</b>	<b>\$29,319</b>	<b>\$28,021</b>	<b>\$26,472</b>	<b>\$25,974</b>	<b>\$25,824</b>
<b>Capitalization and Liabilities</b>					
Proprietary Capital .....	\$ 3,750	\$ 3,707	\$ 3,505	\$ 3,980	\$ 3,508
Long-Term Debt (4) .....	19,204	18,374	18,583	17,303	17,403
Other Liabilities .....	2,993	3,127	2,812	2,715	2,677
Current Liabilities .....	3,372	2,813	1,572	1,976	2,236
<b>TOTAL CAPITALIZATION AND LIABILITIES .....</b>	<b>\$29,319</b>	<b>\$28,021</b>	<b>\$26,472</b>	<b>\$25,974</b>	<b>\$25,824</b>

(1) Reflects a \$900 million nonrecurring writeoff of costs of canceled nuclear units. See Note 1 of Notes to Financial Statements.

(2) See Note 7 of Notes to Financial Statements.

(3) Ratio of Earnings to Fixed Charges is calculated by dividing Net Income plus Interest Charges by Interest Charges.

(4) Excludes defeased debt.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

### Cost Reduction Program

In 1988, the Board announced a restructuring and downsizing of TVA and set the goal of no rate increases for three years. To accomplish this goal, significant steps were taken to make the power system more efficient and productive. As a result of the restructuring and downsizing, the ongoing annual labor cost reduction is approximately \$400 million. This amount includes both operating and capitalized costs. Approximately 55 percent of these costs are operating expenses.

In the fall of 1989, TVA sold a total of \$8 billion in Power Bonds in the public markets primarily to refinance high-interest debt. This refinancing, combined with the retirement of high-interest debt through sales of an internal fund, resulted in annual savings of \$170 million. In fiscal 1992, TVA sold \$5.45 billion in Power Bonds in the public markets to refinance \$5.25 billion aggregate principal amount of high-interest debt, resulting in additional annual interest expense savings of \$33 million. Annual interest expense savings now total \$203 million.

To date, the management actions taken to reduce cost and interest expense have allowed TVA to keep rates at the 1988 level. In July 1992, the Chief Financial Officer recommended no rate increase for fiscal 1993. A sixth year of stable electric rates for TVA customers, as recommended, was approved by the TVA Board of Directors on July 29, 1992, as TVA continues to control operating costs. Other measures are being studied to contribute to the overall efficiency of TVA and to maintain competitive rates in the future.

### Results of Operations

#### *Earnings Summary*

Operating income decreased to \$1,867 million in fiscal 1992 from \$2,089 million in fiscal 1991, due primarily to lower electric revenue and increased operating expenses as described below. In fiscal 1992, TVA had net income of \$120 million compared to net income of \$286 million in fiscal 1991. TVA recorded a charge of \$109 million for the writeoff of certain nuclear fuel assets in fiscal 1992, and a charge of \$223 million in fiscal 1991 for the cumulative effect of accruing postretirement benefits. See Notes 1 and 7 of Notes to Financial Statements. Net income increased by \$673 million from fiscal 1990 to fiscal 1991 primarily because of a one-time writeoff of \$900 million in fiscal 1990 for previously canceled nuclear units. See Note 1 of Notes to Financial Statements.

#### *Operating Revenues*

Operating revenues decreased by \$71 million for the fiscal year ended September 30, 1992, compared to fiscal 1991, primarily due to milder weather conditions, sales of non-firm industrial power, and sluggish economic conditions. As a result of the milder weather conditions, revenue from municipalities and cooperatives was slightly lower in fiscal 1992 than fiscal 1991. Non-firm (economy surplus and limited interruptible) power sales volume increased 16 percent and 31 percent, respectively, when compared to fiscal 1991 and 1990. However, because the rates for non-firm power are lower than rates for firm power, fiscal 1992 revenues are \$42 million less when compared to fiscal 1991 and \$72 million less when compared to fiscal 1990. Revenues from the sale of electric energy to municipalities and cooperatives have represented 84 percent, 83 percent, and 80 percent of total revenues for fiscal years 1992, 1991, and 1990, respectively. Kilowatthour ("kWh") sales of electric energy to municipalities and cooperatives increased 0.8 percent from fiscal 1991 to fiscal 1992. Energy sales in kWh to direct served industries decreased by 5 percent for the fiscal year ended September 30, 1992, compared to fiscal 1991, and increased 2 percent in fiscal 1991 compared to fiscal 1990.

#### *Operating Expenses*

Operating expenses for the fiscal year ended September 30, 1992, increased by \$151 million compared to fiscal 1991, primarily due to increased fuel expenses and additional costs associated with the first full year of

the return to service of Browns Ferry Unit Two. Operating expenses for the fiscal year ended September 30, 1991, decreased by \$174 million compared to fiscal 1990, primarily due to the elimination of the amortization of charges associated with canceled nuclear units.

## **Financial Condition**

### *Liquidity and Capital Resources*

TVA's liquidity is primarily affected by its ability to access capital markets through the issuance of debt securities. Capital resources include cash provided by operations and external financings. For capital requirements met by internally generated funds, see "Statement of Cash Flows" in the Financial Statements. For cash required by TVA for construction expenditures and estimated new borrowings, see "Construction Expenditures".

In April 1992, TVA issued \$1.0 billion in 50-year Power Bonds in the public market, using the proceeds principally to retire short-term debt incurred for capital expenditures relating to TVA's power program. No long-term debt was issued in fiscal 1991 or 1990 to finance construction of the power program. Additional long-term debt was issued for refinancing in fiscal 1990 (fall of 1989) as previously described.

In August 1991, TVA began selling Discount Notes to meet its short-term financing needs. This was done after TVA received a letter from the FFB in August 1991 advising TVA that the existing short-term financing agreement with the FFB would expire according to its terms in October 1991. This agreement expired October 6, 1991. As of December 15, 1992, TVA had outstanding approximately \$2.0 billion in Discount Notes at interest rates competitive with FFB short-term financing rates and discount notes of other government agencies.

## **THE AREA SUPPLIED BY TVA**

TVA supplies power in most of Tennessee, northern Alabama, northeastern Mississippi, and southwestern Kentucky, and in small portions of Georgia, North Carolina and Virginia. The population of the area served by TVA is over 8 million. Subject to certain minor exceptions, TVA may not without specific authorization by Act of Congress enter into contracts which would have the effect of making it or its distributors a source of power supply outside the area for which TVA or its distributors were the primary source of power supply on July 1, 1957.

TVA is primarily a wholesaler of power. Its customers are composed of three major groups: (1) distributors, consisting of municipal and cooperative systems; (2) industries which have large or unusual loads; and (3) federal agencies. In addition, TVA has entered into exchange power arrangements with most of the surrounding electric systems.

## **RATES, CUSTOMERS AND MARKET**

The Act delegates to the Board sole responsibility for establishing the rates which TVA charges and authorizes it to include in power contracts such terms and conditions as in its judgment may be necessary or desirable for carrying out the purposes of the Act. The Act requires the Corporation to charge rates for power which, among other things, will produce gross revenues sufficient to provide funds for operation, maintenance, and administration of its power system; payments to states and counties in lieu of taxes; debt service on outstanding Evidences of Indebtedness, including provision and maintenance of reserve funds and other funds established in connection therewith; and annual payments to the Treasury in repayment of and as a return on the Government's appropriation investment in TVA power facilities. See "The Basic Resolution; Power Bonds and Discount Notes" — "Rate Covenant". Rates set by the Board are not subject to review or approval by any state or federal regulatory body.

The revenue increase resulting from rate adjustments implemented by the Board in fiscal year 1988 was 1.8 percent. The Board determined that there was no need to adjust rates for additional revenue requirements for fiscal years 1989, 1990, 1991, 1992, and 1993.

A summary of power program operating revenues by customer groups for each of the last five fiscal years ended September 30 follows:

<u>Fiscal Year</u>	<u>Total</u>	<u>Municipal and Cooperative Distributors</u>	<u>Industries</u>	<u>Federal Agencies (1)</u>	<u>Electric Utilities and Other</u>
			(Dollars in Millions)		
1992 .....	\$5,065	\$4,266	\$472	\$255	\$72
1991 .....	5,136	4,272	531	257	76
1990 .....	5,339	4,292	548	413	86
1989 .....	5,287	4,109	526	569	83
1988 .....	5,322	4,100	513	623	86

(1) Includes TVA use for construction and nonpower programs.

### **Municipal and Cooperative Distributors**

TVA has entered into wholesale power contracts with 160 municipal and cooperative distributors. Such contracts are for terms of 20 years and require distributors to purchase substantially all of their electric power and energy requirements from TVA. Prior to fiscal 1990, each contract expired and was replaced at the end of its 20-year term but was subject to termination by TVA or the distributor after the first 10 years on at least 4 years' prior notice. Since that time, power contracts were renewed or amended for 154 distributors to change the term provisions such that 10 years' notice is required to terminate the contract and that on each annual anniversary of the contract beginning with the tenth anniversary, one additional year is automatically added to the term. The remaining 6 distributors continue to operate under the original term provisions, but the revised provisions will be included in any replacements of their existing contracts. Municipal and cooperative distributors accounted for approximately 84 percent of total revenues in fiscal 1992.

The contracts contain standard provisions specifying the wholesale rates, resale rates and terms and conditions under which the power is to be distributed. Under the contracts, TVA, on a quarterly basis, may determine and make adjustments in the wholesale rate schedule with corresponding adjustments in resale rate schedules necessary to enable TVA to meet all requirements of the Act and the tests and provisions of its bond resolutions. In addition, the contracts provide for agreement between the parties on general or major changes in both the wholesale and resale rate schedules, and permit TVA, if agreement is not reached, to make changes in such schedules to carry out the objectives of the Act, to meet financial requirements and tests, and to comply with the provisions of its bond resolutions. Consistent with these provisions, in May 1992 TVA and the municipal and cooperative distributors of TVA power implemented changes in the wholesale and resale rate schedules. In general, the changes are intended (a) to improve the match between the distributors' wholesale power costs and their resale revenues and (b) to allow resale rates to better reflect individual cost conditions on each distributor's system. The changes were designed to have no impact on TVA's revenues.

For fiscal 1992, the average charge for power sold to distributors under TVA's wholesale power rate was 4.6 cents per kWh.

The resale rates under which the distributors serve ultimate consumers are stipulated in the power contracts between the distributors and TVA and are revised from time to time to reflect changes in costs, including changes in the wholesale cost of power. They are designed to promote the Act's objective of providing an adequate supply of power at the lowest feasible rates. The average residential charge in the TVA region was 5.8 cents per kWh for fiscal 1992. The corresponding national average was 8.3 cents per kWh for the quarter ending June 1992.

Five of the municipalities which purchase power from TVA accounted for approximately 30 percent of revenues for fiscal 1992.

## **Industries Served Directly**

Contracts with industries served directly by TVA normally are for terms of 10 years but are subject to termination by TVA or the customer upon a minimum notice period that varies according to the customer's contract demand and the period of time service has been provided at that location. Industries directly served accounted for approximately 9 percent of revenues in fiscal 1992. The power sold directly to industries is delivered under contracts at rates established by TVA. Such rates are the same as those charged by distributors to large industries (those with demand greater than 25,000 kilowatts ("kW")) they serve. The average charge to directly served industrial customers during fiscal 1992 was 2.8 cents per kWh.

## **Federal Agencies**

Power is sold to federal agencies under the same contract terms and rates as directly served industries. In fiscal 1992, the average charge for power sold to directly served federal agencies, excluding the scheduled payment from the Department of Energy ("DOE"), was 4.3 cents per kWh. Sales of electric power to DOE amounted to approximately 6.5 percent in fiscal 1990, 3.5 percent in fiscal 1991, and 3.8 percent in fiscal 1992. Under an agreement with DOE, DOE's payment obligations are being satisfied over the remaining contract term through 1994. Reductions in demand under the DOE contracts have been taken into account in TVA's future supply plans. See Note 8 of Notes to Financial Statements.

## **School and Job Credits Program**

TVA announced a School and Job Credits Program on March 16, 1992. Approximately 2,500 public schools and 4,500 industries throughout the TVA area will benefit from this program, which is scheduled to last for one year from May 1, 1992. All public primary and secondary schools and public colleges and universities receive a 10-percent credit on their power bills, while manufacturing industries that have a minimum 50 kW firm power demand are eligible for a 5-percent credit. The resulting energy cost savings for these consumers will mean that TVA will receive approximately \$75 million less in revenues for this usage during the program period. This program is intended to strengthen TVA's customer base, leading to increased electricity sales and allowing more effective use of power resources, thereby ultimately helping to hold down rates for all consumers of TVA power.

## **COMPETITION**

The electric utility industry has become increasingly competitive in the past decade. Competition will intensify in the future as a result of federally encouraged deregulation of utilities affecting the wholesale power markets and various provisions of the Energy Policy Act of 1992 which was signed into law by the President on October 24, 1992. Chief among the provisions of the Energy Policy Act of 1992 which will further intensify the competitive environment are amendments (1) to the Federal Power Act that will give the Federal Energy Regulatory Commission greater authority to order electric utilities with transmission lines to wheel power for electric power generating entities; and (2) to the Public Utility Holding Company Act of 1935 that will allow the creation of certain kinds of power generating entities without it or its parent corporation being made subject to regulation by the Securities and Exchange Commission under that Act.

Nevertheless, a special provision in the Energy Policy Act of 1992 prevents the new Federal Energy Regulatory Commission wheeling authority from being used to provide the municipal and cooperative distributors with an alternative source of power supply. That provision excludes from the new wheeling authority the wheeling of electric energy that will be consumed within the area served by TVA and the distributors (except for Bristol, Virginia).

Although other power suppliers, under certain circumstances, may sell power in the area where TVA power is distributed, there are statutory provisions restricting TVA from expanding the area in which it is a source of power supply. It is important that TVA market power at rates competitive with other suppliers in the region. TVA's success in keeping power rates constant for six successive years is already showing results. TVA believes that its rate freeze has assisted distributors of TVA power in competing for new commercial and



industrial loads. From the July 1988 announcement of TVA's rate freeze through June 1992, more than 2,200 industries announced plans to locate or expand in the Tennessee Valley region. The total investment resulting from these plans is estimated at \$14.1 billion and over 126,000 new jobs.

In today's competitive environment, some of the municipal and cooperative distributors may consider alternative wholesale supply arrangements upon expiration or termination of their power contracts with TVA. One municipal distributor, representing less than one-half of one percent of TVA revenues, has provided TVA with notice of power contract termination to permit it to study alternative power supply arrangements.

## POWER AND ENERGY REQUIREMENTS

TVA's load (net system energy requirements) on a weather normalized basis grew from 94.4 billion kWh in fiscal 1970 to 123.3 billion kWh in fiscal 1980, representing a compound annual growth rate of 2.7 percent.

During the period of 1980 to 1986, TVA's load actually declined to 107.8 billion kWh in 1986 on a weather normalized basis. This decline was caused by the severe economic recession of 1982-1983, high energy prices and a decline in sales to DOE for its uranium enrichment operations from 15.9 billion kWh in 1980 to 0.8 billion kWh in 1986. TVA's load, excluding sales to DOE, grew from 95.3 billion kWh on a weather normalized basis in 1983 to 122.7 billion kWh in 1992, which corresponds to a compound annual growth rate of 2.8 percent. TVA's best estimate of net system energy requirements for fiscal 1993 is 125.1 billion kWh.

The following table sets forth TVA's historical demand and energy requirements on a weather normalized basis for the periods indicated. See "Management's Discussion and Analysis of Financial Condition and Results of Operations" — "Results of Operations" for further discussion of changes between fiscal 1991 and fiscal 1992.

Fiscal Year Ended Sept. 30	Demand (Megawatts)	Percent Change	Net System Energy Requirements (Billions of kWh)	Percent Change
1988.....	20,269	3.8	112.9	2.5
1989.....	21,149	4.3	116.4	3.1
1990.....	21,890	3.5	121.2	4.1
1991.....	21,810	-0.4	121.6	0.3
1992.....	22,533	3.3	122.7	0.9

TVA prepares annual forecasts of future power and energy requirements as part of its planning and budgeting process. In preparing its energy forecast, TVA utilizes forecasts of national economic activity and of substitute fuel prices, primarily natural gas and oil. TVA produces its own forecast of electricity prices for the TVA area based on TVA's system expansion plan and power supply requirements. Three major causal factors (economic activity, substitute fuel prices and electricity prices) are used to forecast electricity sales to distributor served residential, commercial and industrial customers. Special studies are made to forecast electricity requirements for the directly served industries of paper, chemicals, aluminum and ferroalloys. These forecasts are combined to arrive at the load forecast for the entire TVA system.

TVA's forecast procedure involves producing a range of load forecasts for the explicit purpose of bounding the range of uncertainty associated with load growth. The load forecasts are produced probabilistically. TVA believes that the high load forecast has a 90 percent probability that actual load will be less than forecast, that the medium load forecast has a 50 percent probability that actual load will be less than forecast,

and that the low load forecast has a 10 percent probability that actual load will be less than forecast. The range of forecasts for fiscal years 1993-2001 are provided below.

**Forecasted Net System Energy and Demand Requirements  
(Weather Normalized)**

Fiscal Year Ending Sept. 30	High Forecast		Medium Forecast		Low Forecast	
	Energy (Billions of kWh)	Demand (Mega- watts)	Energy (Billions of kWh)	Demand (Mega- watts)	Energy (Billions of kWh)	Demand (Mega- watts)
1993 .....	127.3	23,494	125.1	23,112	123.0	22,792
1994 .....	132.7	24,425	128.5	23,695	124.1	23,027
1995 .....	137.7	25,227	131.4	24,158	124.8	23,126
1996 .....	142.6	26,017	134.0	24,595	125.4	23,222
1997 .....	147.9	26,833	137.1	25,062	126.4	23,353
1998 .....	153.2	27,662	140.2	25,544	127.4	23,492
1999 .....	158.6	28,497	143.4	26,041	128.5	23,645
2000 .....	164.1	29,354	146.7	26,552	129.7	23,814
2001 .....	172.0	30,696	150.6	27,247	130.6	23,986

Various provisions in the Energy Policy Act of 1992 make changes in a wide range of laws affecting energy use and development in the United States of America. In addition to various other features, some of which are discussed herein, this Act establishes a statutory framework for how TVA plans and selects methods for meeting future energy needs.

**CONSTRUCTION EXPENDITURES**

Cash required by TVA for construction expenditures totaled \$1,942 million, \$1,371 million, and \$1,128 million for fiscal years 1992, 1991, and 1990, respectively. Cash required by TVA for construction expenditures and estimated new borrowings for the fiscal years 1993-1997 are shown in the table below. See "Nuclear Power Program" for assumed nuclear plant startup dates used for planning purposes.

Projected Expenditures for Capital Facilities	Fiscal Year Ending September 30				
	1993	1994	1995	1996	1997
	(Dollars in Millions)				
Generating Additions and Improvements and					
Combustion Turbines .....	\$ 414	\$ 402	\$ 393	\$ 391	\$ 382
Transmission System Facilities .....	125	156	169	171	149
Nuclear Facilities					
New Construction .....	509	279	365	596	696
Modifications .....	220	334	243	180	135
Recovery Cost(1) .....	305	56	142	56	—
Clean Air Compliance(2) .....	314	382	163	105	139
General Facilities .....	248	305	304	306	306
Total Capital Facilities(3) .....	<u>\$2,135</u>	<u>\$1,914</u>	<u>\$1,779</u>	<u>\$1,805</u>	<u>\$1,807</u>
New Borrowings for Projected Capital Facilities .....	\$1,200	\$1,400	\$1,200	\$1,100	\$1,100

(1) See Note 1 of Notes to Financial Statements.

(2) These Clean Air Compliance costs are the estimated capital costs for one possible strategy to achieve initial compliance with the Clean Air Amendments of 1990. It is not certain if this strategy will be chosen by TVA or approved by appropriate regulatory agencies.

(3) Excludes relatively small requirements for other general facilities and miscellaneous capital.

TVA's construction program and related expenditures are continuously reviewed and periodically revised because of changes in estimated system load growth, rates of inflation, nuclear licensing requirements and

schedules, the availability and timing of environmental, siting and other regulatory approvals, the scope of modifications required by regulatory agencies, including the Nuclear Regulatory Commission (the “NRC”), the availability and costs of external sources of capital and other factors beyond TVA’s control. All estimated capital costs assume an inflation rate of 5.1 percent.

## POWER SYSTEM

TVA’s power generating facilities at September 30, 1992, included 29 hydroelectric plants, 12 coal-fired plants, 2 nuclear plants, 1 pumped storage hydroelectric plant and 4 gas turbine plants. Power is delivered to TVA customers over a transmission system of approximately 16,800 miles of lines, including 2,400 miles of extra-high-voltage (500,000 volt) transmission lines. The system interconnects with neighboring power systems at numerous points, and TVA has various types of interchange arrangements with these systems. The extent and types of interchange transactions depend upon the characteristics of the systems’ loads, the management policies of the systems and other factors. Interchange arrangements are an essential part of TVA’s efforts to minimize investment in electrical facilities, increase the reliability of service, effect operating economies and minimize the cost of electric energy.

During the fiscal year ended September 30, 1992, 69 percent of the power generated by the TVA coordinated system was by fossil fired plants, 14 percent by hydro, and 17 percent by nuclear. Coal consumption during this time was 34.6 million tons. Coal is purchased under contracts ranging from a single delivery to deliveries over several years. Management believes the sources and availability of fuel materials essential to its business should be adequate for the foreseeable future. TVA coal inventory levels vary from plant to plant based upon a simulated inventory model. As of September 30, 1992, TVA had approximately 26 days’ coal supply in inventory at full burn.

TVA’s power system is one of the largest in the Nation in capacity and in energy production. Its size permits the construction of large facilities which result in lower unit costs. Most of TVA’s dams were completed years ago when construction costs were far below present-day levels. Because most of the dams are multipurpose, their cost is shared by navigation, flood control, recreation and local economic development, as well as by power; thus, each purpose is served at a substantially lower cost than if the dams had been built for a single purpose.

The following table shows the generating capacity on this coordinated system as of September 30, 1992:

	<u>Generating Units</u>	<u>Year Last Unit Placed In Service</u>	<u>Net Dependable Capacity kW(1)</u>
TVA Hydro Plants			
Appalachia .....	2	1943	72,000
Blue Ridge .....	1	1931	2,000
Boone .....	3	1953	54,000
Chatuge .....	1	1954	5,000
Cherokee .....	4	1953	75,200
Chickamauga .....	4	1952	124,000
Douglas .....	4	1954	58,000
Fontana .....	3	1954	172,000
Fort Loudoun .....	4	1949	140,000
Fort Patrick Henry .....	2	1954	36,000
Great Falls .....	2	1925	21,000
Guntersville .....	4	1952	108,000
Hiwassee .....	2	1956	95,000
Kentucky .....	5	1948	175,000
Melton Hill .....	2	1964	75,000
Nickajack .....	4	1968	96,000

	Generating Units	Year Last Unit Placed In Service	Net Dependable Capability kW(1)
Norris .....	2	1936	57,000
Nottely .....	1	1956	9,000
Ocoee No. 1 .....	5	1914	22,000
Ocoee No. 2 .....	2	1913	18,000
Ocoee No. 3 .....	1	1943	27,000
Pickwick .....	6	1952	228,000
South Holston .....	1	1951	22,000
Tims Ford .....	1	1972	27,500
Watauga .....	2	1949	38,000
Watts Bar .....	5	1944	175,000
Wheeler .....	11	1963	386,100
Wilbur .....	4	1950	11,100
Wilson .....	21	1962	629,000
Total TVA Hydro Plants .....			<u>2,957,900</u>
Other Hydro Plants			
Corps of Engineers plants .....			405,000(2)
TVA Pumped Storage Plant			
Raccoon Mountain Pumped Storage Hydro .....	4	1979	<u>1,532,000</u>
Total Hydro .....			<u>4,894,900</u>
Coal-Fired Plants			
Allen .....	3	1959	753,000
Bull Run .....	1	1967	873,000
Colbert .....	5	1965	1,243,000
Cumberland .....	2	1973	2,490,000
Gallatin .....	4	1959	1,020,000
John Sevier .....	4	1957	724,000
Johnsonville .....	10	1959	1,272,000
Kingston .....	9	1955	1,450,000
Paradise .....	3	1970	2,274,000
Shawnee .....	10	1956	1,373,000
Watts Bar .....	4	1945	224,000(3)
Widows Creek .....	8	1965	<u>1,616,000</u>
Total Coal-Fired Plants .....			<u>15,312,000</u>
Nuclear Plants			
Browns Ferry .....	3	1977	3,195,000(4)
Sequoyah .....	2	1982	<u>2,300,000</u>
Total Nuclear Plants .....			<u>5,495,000</u>

	<u>Generating Units</u>	<u>Year Last Unit Placed In Service</u>	<u>Net Dependable Capability kW(1)</u>
Gas Turbine Installations			
Allen .....	20	1972	572,000
Colbert .....	8	1972	448,000
Johnsonville .....	16	1975	912,000
Gallatin .....	4	1975	352,000
Total Gas Turbine Installations .....			<u>2,284,000</u>
Total Capacity .....			<u>27,985,900</u>

- (1) Net dependable capability ("NDC") as stated is the net power output which can be obtained for a period adequate to satisfy the daily load patterns under expected conditions of winter operation with equipment in an average state of maintenance. The gas turbine units are undergoing major rehabilitation to improve their reliability. For the status of certain units, see footnotes 3 and 4 below. For planning purposes, TVA currently estimates summer dependable total hydro capacity of approximately 4,819 megawatts; coal-fired capacity of approximately 14,771 megawatts; nuclear power capacity of approximately 3,309 megawatts; and gas turbine capacity of approximately 1,952 megawatts, for a total dependable capacity of approximately 24,851 megawatts.
- (2) The Corps of Engineers' plants on the Cumberland River System have a total installed capacity of 853,000 kW, of which 405,000 kW of dependable capacity is available to TVA under a marketing agreement with Southeastern Power Administration.
- (3) These units are mothballed and are not readily capable of operating. Additional capital investment would likely be required to bring these units back to reliable operating status.
- (4) This three-unit nuclear plant in northern Alabama was taken offline in March 1985 for certain plant modifications and regulatory improvements. In August 1991, Browns Ferry Unit Two (1,065,000 kW NDC) returned to commercial operation. See "Nuclear Power Program".

Under arrangements among TVA, the United States Corps of Engineers (the "CORPS") and the Southeastern Power Administration (the "SEPA"), 8 hydro plants of the CORPS comprising the Cumberland River system are operated in coordination with the TVA system. These arrangements further provide for capacity (405,000 kW) and energy from the Cumberland River system to be supplied to TVA by SEPA at the points of generation, and the price paid for the power to be based on the operating and maintenance expenses and amortization of the power facilities. A portion of the output of the Cumberland River system is also made available to SEPA's customers outside the TVA region. The agreement with SEPA covering these arrangements for power from the Cumberland River system continues through June 30, 1994, and year to year thereafter. The agreement can be terminated upon three years' notice but not prior to June 30, 1995.

## NUCLEAR POWER PROGRAM

### Overview

TVA began an ambitious nuclear plant construction program in 1966 to meet projected system load growth. At the height of the construction program, TVA had 17 nuclear units either under construction or in commercial operation at seven plant sites. In August 1982, because of lower-than-expected load growth (see "Power and Energy Requirements"), TVA canceled construction of four nuclear units. In August 1984, four more units were canceled. Total investment in the eight units at the time of cancellation was \$4.6 billion. All of this amount had been written off by September 30, 1990. See Note 1 of Notes to Financial Statements.

By August 1985, TVA had delayed completion of two units each at Watts Bar and Bellefonte Nuclear Plants, and TVA had shut down its three-unit Browns Ferry Nuclear Plant and its two-unit Sequoyah Nuclear

Plant because of an increasing number of technical and operational problems. Many of these problems had resulted in multiple escalated enforcement actions by the NRC for violations of its regulations and the imposition by the NRC of significant civil fines. In a September 1985 letter, the NRC required TVA to address its corrective actions in three general areas of concern: (1) programmatic and management deficiencies, (2) plant specific deficiencies in several functional areas and (3) a lack of confidence in TVA management expressed to NRC by TVA employees regarding the adequacy of construction of the Watts Bar units. In that letter, the NRC requested that TVA furnish certain information to the NRC before restarting any of its licensed nuclear units or requesting a license for Watts Bar Unit One.

### **Nuclear Recovery Program**

As a result of an extensive review of its nuclear program, TVA determined that the primary cause of the problems was the lack of a sufficient number of experienced nuclear managers who could provide leadership and proper direction for TVA's nuclear activities. In response to this situation, TVA restructured its organization and assigned responsibility for all of its nuclear power activities to a single organization based in large part on a new management team. To provide a comprehensive recovery plan from the problems with its nuclear program and to answer the questions raised by the NRC, TVA developed a Nuclear Performance Plan. The plan was reviewed by the NRC and served as a key reference in TVA's recovery efforts.

### **Nuclear Plant Regulation**

A Construction Permit must be obtained from the NRC before constructing a nuclear plant, and an Operating License must be obtained from the NRC before a nuclear plant may be operated. Each of these steps requires the submission of extensive documentation, notice to the public, and opportunity for public participation in what sometimes become lengthy public hearings. In the past in the nuclear industry, such hearings and challenges through the courts have often resulted in delays in the operation of nuclear plants. Because of such delays and extensive regulatory requirements, estimates of costs to complete or recover nuclear plants have typically been unreliable. Activities related to nuclear plant construction and operation are constantly inspected by the NRC for compliance with detailed NRC regulations, and the NRC vigorously enforces those regulations. The NRC has the authority to enforce its regulations through several mechanisms including issuance of civil monetary penalties and modification, suspension or revocation of licenses.

### **Sequoyah**

Sequoyah Nuclear Plant is a two-unit plant located approximately 7.5 miles northeast of the city limits of Chattanooga, Tennessee, with pressurized water reactors supplied by Westinghouse Electric Corporation. Each unit is rated at 1148 megawatts net electrical output. TVA received an Operating License for Unit One in 1980, and the unit began commercial operation in 1981. TVA received an Operating License for Unit Two in 1981, and the unit began commercial operation in 1982. The Operating Licenses expire 40 years after issuance. The plant was designed, built and is operated by TVA. Because of questions raised about the qualification of electrical equipment to operate in the harshest possible environment for which the plant was designed, TVA voluntarily shut down both units in August 1985.

Prior to restarting the Sequoyah units, TVA extensively addressed organizational, programmatic and specific plant improvements. Unit Two was restarted in May 1988, and Unit One was restarted in November 1988. Since restart, both units have established new records for continuous operation of 299 days (previously 197 days) for Unit One and 306 days (previously 209 days) for Unit Two.

Because of improvement in the operation of TVA's Sequoyah Nuclear Plant, in May 1989 the NRC notified TVA that both Sequoyah units had improved sufficiently to be removed from the NRC's list of plants that required close monitoring. Since that time, NRC oversight of Sequoyah has been of the normal routine associated with any operating nuclear plant. Published statistics for the nuclear industry indicated that in

calendar year 1991 Sequoyah Unit Two ranked 4th in the United States and 14th in the world in terms of kWh of generation and 8th in the United States and 21st in the world in terms of capacity factor for nuclear units.

NRC completed a Systematic Assessment of Licensee Performance (“SALP”) for Sequoyah for the period June 2, 1991, to August 1, 1992. Performance was evaluated in the functional areas of plant operations, radiological controls, maintenance/surveillance, emergency preparedness, security, engineering/technical support and safety assessment/quality verification. A category rating of 1, 2 or 3 was assigned for each functional area. Summarized definitions for each rating are as follows: Category 1 — Performance substantially exceeds regulatory requirements; reduced NRC attention may be appropriate. Category 2 — Performance above that needed to meet regulatory requirements; NRC attention may be maintained at normal levels. Category 3 — Performance does not significantly exceed that needed to meet minimal regulatory requirements; NRC attention should be increased above normal levels. Sequoyah received a rating of “1” in security and emergency preparedness and a rating of “2 and improving” in engineering/technical support, a rating of “2” in radiological controls, maintenance/surveillance, safety assessment/quality verification and a “2 and declining” in operations. Sequoyah did not receive any “3” ratings.

### **Browns Ferry**

Browns Ferry Nuclear Plant is a three-unit plant located approximately 10 miles southwest of Athens, Alabama, with boiling water reactors supplied by General Electric Company. Each unit is rated at 1067 megawatts net electrical output. The plant was designed, built and is operated by TVA. TVA received Operating Licenses for Units One, Two, and Three in 1973, 1974 and 1976, respectively. They began commercial operation in 1974, 1975 and 1977, respectively. The Operating Licenses for these units expire 40 years after issuance. Units One and Three were voluntarily shut down by TVA in March 1985 in response to technical and operational concerns. Unit Two was in a refueling outage at the time. Because of these and subsequently discovered concerns, TVA decided not to restart any Browns Ferry units until it was determined that the plant could be operated safely.

As part of TVA’s nuclear recovery effort, an in-depth review was conducted to determine what needed to be accomplished prior to restart and to determine the root causes of the decline in regulatory compliance at Browns Ferry. As with the Sequoyah units, TVA extensively addressed organizational, programmatic and specific plant improvements at Browns Ferry, including significant steps to improve management of the plant. Wherever possible in these efforts, TVA applied the knowledge gained from its successful resolution of similar issues in the recovery and startup of the Sequoyah units. TVA completed the corrective actions necessary to load fuel in Unit Two during the first quarter of calendar year 1991 and with the NRC’s prior authorization, restarted the unit in May 1991. Unit Two was returned to commercial operation during August 1991.

In a February 1992 public meeting, the NRC characterized the Browns Ferry Unit Two restart efforts as exceeding expectations, and noted substantial improvements in plant operations. In June 1992 after the NRC’s SALP for Unit Two for the period from May 24, 1991 to May 23, 1992 was completed, the NRC notified TVA that Unit Two had demonstrated excellent plant performance and a conservative approach to operations such that a sustained period of safe plant operation had been achieved. As a result, Unit Two was removed from the NRC’s list of plants requiring continued close monitoring. In the seven SALP categories rated by the NRC, Browns Ferry Unit Two substantially exceeded NRC requirements and received a rating of “1” in plant operations, radiological controls and emergency preparedness. Plant performance was above that needed to meet NRC requirements and received a “2 and improving” rating for safety assessment/quality verification and “2” ratings for maintenance/surveillance, security and engineering/technical support. Unit Two did not receive any “3” ratings. The NRC is retaining Browns Ferry Units One and Three in the category of plants which require NRC authorization to operate and receive continued close monitoring.

From March 1985 through September 1992, the capitalized costs for improvements to Browns Ferry during the nuclear recovery program were \$2.3 billion, including capitalized interest. The schedules for Browns Ferry Unit Three and subsequent startup of Browns Ferry Unit One are currently being developed. The capitalized costs for returning these units to service, based on the inflation assumptions set forth in

“Construction Expenditures”, are anticipated to be in the range of \$300 million to \$400 million for Unit Three and in the range of \$750 million to \$850 million for Unit One, which includes estimated capitalized interest in the range of approximately \$20 million to \$40 million for each unit. For budget planning purposes only, these amounts are based on an assumption that Units Three and One will be placed in service in the spring of 1994 and 1996, respectively. Assurance cannot be given that these estimates will not be changed significantly.

## **Watts Bar**

Watts Bar Nuclear Plant is a two-unit power plant located approximately 50 miles northeast of Chattanooga, Tennessee, with pressurized water reactors supplied by Westinghouse Electric Corporation. Each unit is rated at 1160 megawatts net electrical output. The plant was designed, has been built to its present level of completion, and will be operated by TVA. Construction Permits were obtained for both units in January 1973. Construction Permits expire for Unit One in December 1993, and for Unit Two in June 1997.

The last SALP performed by the NRC for Watts Bar was prior to the start of TVA’s nuclear recovery program. For that period (January 1985 through May 1985 for Unit One and March 1984 through May 1985 for Unit Two), TVA received a rating of 3 in licensing activities and a rating of 2 in the remaining ten categories rated.

As of September 30, 1992, nuclear plant construction in progress for TVA’s entire system consisted of Unit One at Watts Bar. Although physical construction of Watts Bar Unit One was substantially complete in 1985, efforts to obtain a license from the NRC to operate it were delayed by the expression of numerous safety concerns by construction and other Watts Bar workers. Overall, TVA determined that while it had organizations, programs, processes and procedures in place to control plant design and construction activities, there were weaknesses identified in some of TVA’s programs that were not in all cases adequately addressed. In some cases, TVA had not identified adequately the scope of weaknesses, identified root causes, implemented corrective actions or provided adequate controls to prevent recurrence of problems.

TVA established a group of senior personnel experienced in nuclear design and construction which developed a list of corrective actions, except for those of a routine nature, to be completed before fuel load. However, toward the end of 1987, it was recognized that the issue discovery process at Watts Bar may not have identified all nonconforming items. Therefore, an additional effort was undertaken to perform an integrated, systematic evaluation of Watts Bar and to make recommendations regarding the adequacy of Watts Bar design and construction. Some of the technical issues addressed include welding, design baseline verification, electrical issues, qualification of replacement parts, instrumentation lines, control room design, equipment seismic qualification, fire protection, quality assurance records and the prestart test program. Wherever possible, in these efforts to prepare Watts Bar for operation, TVA has applied the knowledge gained from its successful resolution of similar issues in the recovery and startup of Browns Ferry Unit Two and the Sequoyah units.

While undertaking modifications to address some of these issues in preparation for operation, TVA discovered problems in its work control processes which called into question the effectiveness of the work being performed. As a result, in December 1990, TVA halted construction-related work at the site until corrections to the work control processes were made to ensure the quality of the work. TVA revised and improved its work control practices. In November 1991, TVA obtained NRC concurrence to restart construction-related work on a limited basis and in June 1992, concurrence to proceed with unrestricted construction work was received. While construction work has been resumed, no assurance can be given that further delays in bringing the units into operation will not occur.

For budget planning purposes, TVA’s plans are to seek NRC approval to bring Unit One into commercial operation during the summer of 1994. Total investment in Unit One at September 30, 1992, was \$5.6 billion, including capitalized interest. Anticipated cost to complete Unit One is currently estimated to be from \$450 million to \$550 million, excluding capitalized interest. Assurance cannot be given that these estimates will not be changed significantly. Completion cost and schedule are currently under review.



On October 1, 1988, TVA suspended construction activities at Unit Two because of a reduction in the forecasted load growth, and the unit is currently in layup pending a determination of when it will be required to meet future TVA power needs. As of September 30, 1992, construction of Unit Two was estimated to be approximately 70 percent complete including retrofit work based on an estimate of remaining workhours for known work. TVA anticipates the corrective actions on Watts Bar Unit Two to be similar to those of Watts Bar Unit One.

Total investment in Unit Two at September 30, 1992, was \$1.6 billion, including capitalized interest. Anticipated cost to complete Unit Two is currently estimated to be from \$1.1 billion to \$1.3 billion, excluding capitalized interest. For budget planning purposes, the cost to complete is based on an assumption that Unit Two will be placed in service in 1999. Assurance cannot be given that these estimates will not be changed significantly. Completion cost and schedule are currently under review.

### **Bellefonte**

Bellefonte Nuclear Plant is a two-unit power plant located approximately 59 miles southwest of Chattanooga with pressurized water reactors supplied by Babcock & Wilcox Company ("B&W") rated at 1212 megawatts net electrical output each. The plant was designed, has been built to its present level of completion, and will, under current plans, be operated by TVA. Construction Permits were obtained from the NRC for both units in December 1974.

TVA deferred construction activities on Unit Two at Bellefonte because of a reduction in forecasted load growth in October 1985. Construction activity was deferred on Unit One in July 1988. In July 1988, TVA notified the NRC of this action in accordance with the NRC's October 1987 Policy Statement on Deferred Nuclear Plants. TVA anticipates that the Construction Permits from the NRC, which expire July 1, 1994, for Unit One and July 1, 1996, for Unit Two, will need to be extended. Such extensions have been obtained in the past without difficulty.

While the design is similar to earlier B&W designs, the Bellefonte reactors are larger and include certain improvements over earlier designs. No other plants using this later design have obtained operating licenses in the United States. The only other unit of this design in the United States that has not been canceled is in a deferred status, and another unit of a similar design is in Germany. Since this particular design has not previously been licensed by the NRC, additional testing to validate certain analyses may be necessary before the unit is placed in commercial operation.

As of September 30, 1992, TVA had \$4.4 billion, including capitalized interest, invested in these units. Problems that may exist, upgrades that may be required, and any corrective actions that may be necessary in view of the problems discovered at other TVA designed and constructed plants will be described and submitted to the NRC, as appropriate, in connection with any resumption of construction.

TVA currently estimates, based on the inflation assumptions set forth in "Construction Expenditures", the cost to complete these two units to be in the range of \$2.5 billion to \$3.0 billion, excluding capitalized interest. For budget planning purposes, these amounts are based on an assumption that Units One and Two will be placed in service in 1998 and 2002, respectively. However, these estimates are under review, and due to numerous uncertainties, no assurance can be given that the estimated range of completion costs will not be changed significantly.

### **Nuclear Completion Schedules and General Needs**

The nuclear completion schedule meets all projected TVA system capacity and energy needs through 2005. It provides a sufficient surplus to meet system contingencies or to provide for additional sales opportunities which might benefit the TVA ratepayer. TVA has the ability to accelerate the second units at Watts Bar and Bellefonte if necessary to meet system needs.

## Nuclear Fuel

Virtually all nuclear fuel purchased to date by TVA is now held by SSEC, from which TVA leases its fuel for all TVA nuclear units (operating, under construction, and deferred). The net book value of all nuclear fuel was \$2,261 million as of September 30, 1992. The net book value of the nuclear fuel for each nuclear plant site as of September 30, 1992 (including interest component on the investment in fuel being prepared for use in the units), is as follows (in millions):

Sequoyah .....	\$ 267
Browns Ferry .....	380
Watts Bar .....	320
Bellefonte .....	330
Uranium Inventories (unassigned) .....	964
Total .....	<u>\$2,261</u>

SSEC's investment in the fuel being used in the Sequoyah units and Browns Ferry Unit Two is being amortized, and TVA's rental payments are accounted for as a fuel expense. The recovery of the investment in the fuel inventories is also dependent upon the future operation of TVA's nuclear units. The Bellefonte initial cores have been defabricated and the uranium from these cores will be used in the Sequoyah and Browns Ferry units in the near future and the net book value shown assigned accordingly.

SSEC borrows from the FFB the funds it needs to pay for the nuclear fuel, securing its loan with the assignment of lease payments to be made by TVA. At such time as FFB financing may no longer be available (see "Financing Arrangements"), it may be possible to continue the SSEC lease arrangement with another funding source replacing the FFB. In the absence of such arrangement, the lease will be terminated with TVA having the obligation to either purchase the fuel from SSEC or cause it to be purchased by a third party such as a privately financed leasing company. Other events could also result in termination of the lease such as (1) the occurrence of various circumstances described in the lease which would expose SSEC to potential liability for which indemnification by TVA under the lease would not be available (which includes changes in certain laws and regulations) and (2) the occurrence of events of default, as defined in the lease (which includes nonpayment of amounts owed by TVA and failure by TVA to perform or observe its contractual obligations under the lease). In the event of any such termination, TVA would be required to purchase, or cause a third party to purchase, all nuclear fuel held by SSEC at the then remaining net book cost.

## Nuclear Waste

### *Spent Nuclear Fuel*

The Nuclear Waste Policy Act of 1982 (the "NWP") provides that the federal government has the responsibility for the permanent disposal of spent nuclear fuel, but charges each nuclear power system with the responsibility for the cost of such permanent disposal. The NWP requires each nuclear power system to enter into a disposal contract with DOE for such material. The contract requires each nuclear power system to pay a fee which is currently one mill per kWh for the net electricity generated and sold by each of its reactors. TVA's spent fuel efforts will ensure that sufficient cost-effective at-reactor storage is available to meet all of TVA's spent fuel storage requirements until DOE is prepared to accept TVA's spent fuel.

TVA presently has the capability to store its spent fuel at Sequoyah and Browns Ferry nuclear plants through the years 1996 and 2005, respectively. TVA plans to extend storage capability through life-of-plant by using higher density racks in its existing storage pools, fuel rod consolidation or dry storage casks. A license amendment request to use high density racks at Sequoyah is pending before the NRC. Extending storage capability by use of high density racks, as well as fuel rod consolidation and dry storage casks, has been licensed by the NRC at other facilities and NRC approval of TVA's request is anticipated. TVA estimates the cost of extending its spent fuel storage capacity at approximately \$1 million to \$2 million per year per unit.

### *Low-Level Radioactive Waste*

Disposal costs for low-level radioactive waste that result from normal operation of nuclear units have increased significantly in recent years and are expected to continue to rise. Pursuant to the Low-Level Radioactive Waste Policy Act, each state is responsible for disposal of low-level waste generated in that state. States may form regional compacts to jointly fulfill their responsibilities. The States of Tennessee and Alabama (where TVA nuclear plants are located) have joined with six other southeastern states to form the Southeast Compact Commission for Low-Level Radioactive Waste Management. This commission regulates the siting of new disposal facilities and the disposal of low-level waste within the southeastern states.

Low-level waste generators (such as TVA) located in the eight southeastern states are required to dispose of such waste at an existing facility in South Carolina. This facility is scheduled to be closed by the State of South Carolina on December 31, 1995. The states participating in the Southeast Compact Commission have selected North Carolina as the host state for the next disposal site, and work is underway in that state to select, license, and construct a new disposal site to take the place of the South Carolina site. Under the current schedule for this work, the new North Carolina disposal facility is planned to be open in 1996. Sufficient storage capacity is available at TVA nuclear plant sites to meet anticipated needs until the opening of the new disposal facility. However, assurance cannot be given that the scheduled date will not change.

### **Nuclear Insurance**

The indemnification and limitation of liability plan afforded the United States nuclear industry by the Price-Anderson Act was extended for an additional 15 years in 1988, with certain provisions of the Price-Anderson Act now due to expire on August 1, 2002. The 1988 amendments to the Price-Anderson Act substantially increased the limit of liability from an accident at an NRC-licensed reactor to approximately \$7.4 billion, composed of primary and secondary layers of financial protection.

The primary layer consists of nuclear liability insurance which is required to be maintained in the amount of \$200 million for each plant site with units licensed to operate. Should the damages from a nuclear accident exceed a licensee's liability insurance coverage, a secondary layer of protection is triggered whereby each nuclear reactor licensee could be retrospectively assessed, for each of its nuclear units licensed to operate, an amount not to exceed \$63 million per nuclear accident, with a maximum annual assessment of \$10 million per unit per accident. Any damages in excess of this amount in any year would be carried forward until fully paid. In addition, the Price-Anderson Act requires that this retrospective premium be adjusted by the NRC for inflation at least once every five years. Should the sum of all public liability and legal costs arising from any nuclear accident exceed the maximum amount of financial protection, each reactor licensee can be assessed an additional 5 percent of the \$63 million assessment (\$3.15 million) per unit. TVA maintains for each of its two nuclear plant sites with units licensed to operate, nuclear liability insurance in the amount of \$200 million. Since at this time TVA has five licensed units, the \$10 million maximum annual assessment per unit serves to limit TVA's financial responsibility in the event of a nuclear accident to \$50 million per year per accident.

NRC regulations require nuclear power plant licensees to obtain, and TVA has acquired, onsite property damage insurance coverage of \$1.06 billion per nuclear site. Some of the nuclear property insurance may require the payment of retrospective premiums of up to approximately \$31 million in the event that losses by another insured party or TVA exceed available funds.

In accordance with NRC regulations, the proceeds of nuclear property insurance are used first to ensure that the reactor is in safe and stable condition and that it can be maintained in a condition that prevents significant risk to the public. Next, the proceeds go for decontamination or, if necessary, decommissioning the reactor. Any excess proceeds insure against casualties to property.

## **Decommissioning**

Since 1982, TVA has made investments in an internal fund for decommissioning nuclear plants. As of September 30, 1992, the decommissioning fund consisted of \$708 million face value zero-coupon bonds maturing between 1998 and 2008. These investments are carried on TVA's balance sheet at accreted cost.

In July 1990, TVA notified the NRC of its intent to have adequate funds available for decommissioning when necessary. The amount stated for each of the Browns Ferry units was \$190 million, and for each of the Sequoyah units was \$150 million. TVA assumes that decommissioning funds will be needed for Browns Ferry by 2016 and Sequoyah by 2021 (the years in which the last operating licenses expire at each site). Based on these dates and a 5 percent annual escalation rate, TVA projects that \$2.0 billion and \$1.4 billion, respectively, will be necessary to decommission the Browns Ferry and Sequoyah sites.

## **ENVIRONMENTAL MATTERS**

TVA's activities are subject to various federal, state, and local environmental statutes and regulations. Major areas of regulation affecting TVA's activities include air pollution control, water pollution control, and management and disposal of solid and hazardous wastes. Because TVA is a federal agency, it is subject only to those state and local environmental requirements for which Congress has clearly waived federal agency immunity. Respecting the major environmental areas (air, water and waste), limited waivers have been enacted by Congress. TVA's activities may also be subject to other narrower environmental requirements or to environmental requirements which affect only federal activities.

TVA has incurred and continues to incur substantial capital expenditures and operating expenses to comply with environmental requirements. Because of the continually changing nature of these requirements, the total amount of these costs is not now determinable. It is anticipated that environmental requirements will become more stringent and that compliance costs will increase, perhaps by substantial amounts.

### **Air Pollution**

Under the Clean Air Act, the United States Environmental Protection Agency (the "EPA") has promulgated national ambient air quality standards for certain air pollutants, including sulfur dioxide, particulate matter and nitrogen oxides. Coal-fired generating units are major sources of these pollutants. TVA also operates other smaller sources. The States of Alabama and Tennessee and the Commonwealth of Kentucky have promulgated implementation plans which regulate sources within their boundaries, including TVA sources, in order to achieve and maintain the national ambient standards. TVA has installed control equipment and employs control strategies to comply with applicable state-established emission limitations. TVA estimates that it has spent about \$1.2 billion in capital costs on air pollution control activities and annual expenditures (operation, maintenance, amortization of control equipment and low sulfur coal premiums) range from \$300 million to \$350 million presently.

The acid rain control provisions of the Clean Air Act, as amended, establish a number of new requirements for utilities. These requirements will be implemented by EPA and the states in two phases and will result in substantial capital expenditures and increases in operating costs. Scrubbing the two units at Cumberland Fossil Plant, assuming receipt of bonus allowances, and switching to a lower sulfur coal at Gallatin Fossil Plant have been found to be the most cost-effective Phase I actions for complying with Phase I SO<sub>2</sub> reduction requirements. In 1993, EPA, by a public lottery, is expected to award bonus allowances to units which scrub. However, TVA has entered into an agreement with other utilities building scrubbers for Phase I compliance that will ensure our receipt of sufficient bonus allowances to maintain the cost effectiveness of the Cumberland scrubbers. The total capital cost of the program (Phases 1 and 2) is estimated to be in the range of \$1.5 billion to \$2.0 billion. Additional annual revenue requirements for compliance with Phase 1 (1999) are estimated to be in the \$150 million to \$200 million range.

TVA is also working with the Commonwealth of Kentucky to resolve opacity problems which occur at its Paradise Fossil Plant. How these problems will be resolved and the cost and timing of such resolution cannot now be determined, but costs are not expected to be significant on an annual basis.

## **Water Pollution**

Under the Clean Water Act, every point source which discharges pollutants into navigable waters must obtain a National Pollutant Discharge Elimination System (“NPDES”) permit specifying the allowable quantity and characteristics of the pollutants discharged. TVA’s various point sources have received NPDES permits, including all of its major generating units. Compliance with NPDES requirements has necessitated substantial expenditures and may require additional, substantial expenditures in the future as NPDES permits come up for renewal and applicable requirements are made more stringent. State implementation of EPA’s new stormwater regulations are resulting in revised monitoring requirements for TVA’s NPDES permits and could eventually result in new discharge limits.

The Clean Water Act allows the permitting authority to establish thermal limits less stringent than the water quality criteria if the discharger can demonstrate that the alternate limit will assure protection and propagation of a balanced, indigenous aquatic population. TVA submitted such a demonstration to EPA and Tennessee for its John Sevier Fossil Plant in 1977. The plant was issued, on an interim basis, the discharge limit which TVA requested be established as the final limit. If the alternative thermal limit proposed by TVA is eventually denied, TVA could be required to erect cooling towers at the plant. Preliminary capital cost estimates for cooling towers range from \$100 million to \$150 million. This could also lead to removal of a detention dam and the sediment accumulated behind the dam with uncertain but potentially substantial costs. Compliance with the thermal limits at several of TVA’s other plants may require operational or equipment changes in the future. The potential costs and timing of such changes are unknown at this time.

## **Solid and Hazardous Waste Management**

Under the Resource Conservation and Recovery Act (“RCRA”), the storage, transportation, and disposal of hazardous wastes are regulated by EPA and the states. RCRA also allows EPA and the states to regulate solid wastes and the states have detailed permitting programs for this. TVA has detailed procedures in place that comply with all applicable requirements for the management of hazardous wastes. In addition, TVA has instituted an acceptable supplier list for hazardous waste disposal contractors under which such contractors’ financial status, compliance history, and physical facilities and operations are reviewed before they are allowed to treat or dispose of any of the hazardous wastes generated by TVA facilities. TVA does not itself operate any hazardous waste disposal or treatment facilities but does operate one permitted hazardous waste storage facility. TVA has obtained or is in the process of obtaining solid waste disposal permits for the solid waste disposal areas (e.g., fly ash, scrubber sludge, demolition materials, asbestos) it operates at its plant sites. TVA’s costs in this area have not been substantial but applicable requirements are constantly changing and are expected to become more stringent. If those requirements evolve to the point that previously disposed ash must be removed, significant expenditures could be involved.

Under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), the release and cleanup of hazardous substances are regulated. Persons who generate, store, transport, or dispose of the substances can be held responsible for the cost of such cleanups regardless of when the substances were generated and whether or not the substances were properly handled at the time of disposal by the generator. Liability under CERCLA is generally viewed as joint and several. TVA, in a manner similar to other industries and power systems, has generated hazardous substances which were disposed of at offsite disposal areas. Some hazardous substances were also disposed of at TVA facilities which generated them. As required by CERCLA, TVA has reviewed its power system facilities and has not yet identified any areas where hazardous substances were disposed of by TVA in amounts which are likely to generate substantial cleanup costs or which appear to have had other than a minor impact on the environment. TVA cannot meaningfully evaluate its exposure to potential liability for cleanup of offsite disposal areas. At this time, TVA has been formally identified as a potentially responsible party at three offsite disposal areas. Assuming its liability is established at these three sites, TVA’s potential share of any cleanup costs would not be substantial.

## Miscellaneous

Polychlorinated biphenyls (“PCBs”) have been widely used as insulating fluids in electric equipment (e.g., transformers and capacitors). Use of such equipment and the cleanup of released PCBs are regulated by EPA under the Toxic Substances Control Act. The TVA power system uses thousands of pieces of equipment which contain some level of PCBs. Most of this equipment can continue to be operated under EPA’s PCB regulations for the remainder of its useful lives, but TVA is phasing out much of this equipment as a matter of policy. The cost of phasing out all of this equipment would exceed \$100 million (equipment replacement and disposal costs) but cannot be accurately determined at this time. TVA has in place detailed procedures to conform its operations to EPA’s PCB regulations, and it has not incurred substantial costs in this area.

Many of TVA’s facilities were constructed at a time when asbestos was the insulation of choice by industry. Asbestos materials now require special handling and disposal when they are removed. Although not required, TVA is considering removing or encapsulating (and has to a limited extent removed or encapsulated) some or most of these materials. The costs of doing this cannot be accurately estimated but are not likely to be substantial on an annual basis.

There is a growing public concern about whether there are adverse health effects from exposure to electric and magnetic fields (“EMF”). There are many sources of EMF, including electric transmission lines. Although there is no conclusive evidence that EMF causes adverse health effects, research in this area continues. Substantial costs could be incurred by TVA and other electric systems if EMF levels from transmission lines have to be reduced.

As a federal agency, TVA is required to consider the potential environmental effects of major federal actions affecting the quality of the human environment under the National Environmental Policy Act (the “NEPA”), and implementing regulations and to make these evaluations available to the public. Other federal agencies are also required to consider the potential environmental effects of major federal actions within their control which, among other actions, includes the issuance of permits or licenses relating to the construction or operation of electric generation facilities. NEPA does not dictate that a particular decision be made, but the NEPA review process can take 14 to 24 months to complete on the average for major proposals for which environmental impact statements are prepared. TVA has incorporated the NEPA review process into its decision making process. NEPA-related costs are incurred continuously but not in substantial amounts.

## INSURANCE

TVA does not generally carry disaster or public liability insurance except as may be required or appropriate with respect to nuclear facilities and except to the extent it may do so as part of an owner-controlled insurance program it has implemented for some large contracts requiring on-site labor. Liability for service-connected injuries to employees is governed by the Federal Employees’ Compensation Act. See “Nuclear Power Program” — “Nuclear Insurance” and Note 9 of Notes to Financial Statements for additional information with respect to insurance.

## MANAGEMENT

TVA is administered by a board of directors composed of three persons appointed by the President and confirmed by the Senate. Currently one position on the Board is vacant. The Board and selected officers, their ages, their years of employment with TVA and principal occupations for the past five years are as follows:

<u>Name and Title</u>	<u>Age</u>	<u>Year Commenced Employment</u>	<u>Year Term Expires</u>
John B. Waters ..... Chairman	63	1984	1993
William H. Kennoy ..... Director	55	1991	1999
Oliver D. Kingsley, Jr. .... President, Generating Group	50	1988	
Mary Sharpe Hayes..... President, Customer Group	38	1990	
Norman A. Zigrossi..... President, Resource Group	56	1986	
William F. Willis ..... Senior Executive Officer and President, Board Advisory Group	58	1960	
William F. Malec ..... Executive Vice President and Chief Financial Officer	52	1989	
Mary L. Cartwright ..... Executive Vice President	44	1989	
Edward S. Christenbury ..... General Counsel and Secretary	51	1987	

Mr. Waters was appointed to the Board in August 1984. He is an attorney with twenty-three years of legal experience in the State of Tennessee. He was designated by President Bush as Chairman of the Board of Directors effective July 6, 1992.

Mr. Kennoy was appointed to the Board in April 1991. Prior to his current position, he served as President of Kennoy Engineers for twenty-five years.

Mr. Kingsley was named President of the Generating Group in January 1991. Prior to his current position, he served as TVA's Senior Vice President of Nuclear Power (1988-1991) and as Vice President, Nuclear Operations for System Energy Resources, Inc. (Mississippi Power and Light Company) (1985-1988).

Ms. Sharpe Hayes was named President of the Customer Group in January 1991. Prior to her current position, she served as TVA's Vice President of Marketing and Strategic Planning (1990-1991) and as Senior Marketing and Strategic Planning Consultant with Temple, Barker and Sloane (1985-1990).

Mr. Zigrossi was named President of the Resource Group in April 1992. Prior to his current position, he served as TVA's Inspector General (1986-1992).

Mr. Willis was named Senior Executive Officer and President of the Board Advisory Group in April 1992. Prior to his current position, he served as TVA's Senior Executive Officer, Chairman of the Executive Committee, and President of the Resource Group (1991-1992), as TVA's Executive Vice President and Chief Operating Officer (1988-1991), and as TVA's General Manager (1979-1988).

Mr. Malec was named Executive Vice President and Chief Financial Officer in July 1992. Prior to his current position, he served as TVA's Senior Vice President of Finance and Administration and Chief Financial Officer (1991-1992), as Senior Vice President and Chief Financial Officer (1989-1991), and as Treasurer of Central and South West Corporation (1978-1989).

Ms. Cartwright was named Executive Vice President in July 1992. Prior to her current position, she served as TVA's Senior Vice President of Communications and Employee Development (1991-1992), as TVA's Vice President of Communications (1989-1991), and as Communications Manager for Duke Power Company (1979-1989).

Mr. Christenbury assumed the position of General Counsel of TVA in January 1987. Prior to his current position, he served as an Assistant General Counsel at the Nuclear Regulatory Commission (1980-1987).

## **EMPLOYEES**

On September 30, 1992, TVA had about 19,600 employees, of which approximately 6,300 were trades and labor employees. Neither the federal labor laws covering most private sector employers, nor those covering most federal agencies are applicable to TVA; however, the Board has a longstanding policy of recognizing and dealing with recognized representatives of its employees. TVA employees are prohibited by federal law from engaging in strikes against TVA. In 1992, TVA entered into separate long-term agreements with the Tennessee Valley Trades and Labor Council ("Council"), the Salary Policy Employee Panel ("Panel"), and the International Brotherhood of Teamsters ("Teamsters"). One agreement recognizes the Panel for collective bargaining purposes for 20 years. The other recognizes the Council and Teamsters for collective bargaining purposes for 15 years. About 80 percent of TVA's employees are in these bargaining units, all of which are covered by existing collective bargaining agreements. The collective bargaining agreements with the Council (which is comprised of six unions representing annual trades and labor employees, including those working inside the power plants) and the Teamsters (covering materials handling work) have no specific expiration date; however, each contains provisions for possible expiration of major parts of the agreement as early as 1997, upon six-months' notice. The collective bargaining agreement with the Panel (comprised of five unions representing white collar employees) also has no expiration date; however, the agreement provides for possible expiration of major parts of the agreement in 1999, upon 12-months' notice. Each of these agreements provide for negotiation of most provisions except monetary matters about every 3 years; wage and salary and benefit negotiations or adjustments generally occur annually. Unresolved disputes over rates of pay for trades and labor employees are resolved by binding decisions of the Secretary of Labor, while pay and monetary benefits disputes for other represented employees are resolved through binding arbitration. TVA's hourly construction, modification and supplemental maintenance work is now performed by contractors under project labor agreements recently negotiated by TVA and the Council. Permanent craft operating and regular maintenance work will continue to be performed by annual TVA employees represented by the Council for operating and maintenance employees, and by the Teamsters for materials handling work.

Salaries of regular TVA employees are limited by a federal pay cap (Executive Level IV, currently \$112,100). This had led in the past to difficulties in the recruitment and retention of top management talent, and continues to be an issue which TVA must face in its recruitment and retention efforts. The impact of the pay cap has been alleviated somewhat by the increases in TVA's pay cap since January 1990 from \$80,700 to \$112,100. TVA has also addressed this issue by developing and implementing supplementary compensation arrangements, which have substantially reduced the impact of the pay cap. In TVA's opinion, the implementation of these arrangements is within TVA's legal authority. The General Accounting Office (the "GAO") has expressed the opinion that some of these arrangements are not within TVA's legal authority. However, GAO has no authority to issue binding legal opinions on this matter or to stop any TVA payments. Congress is aware of TVA's supplemental compensation arrangements and has not taken any action that would undermine TVA's position that the arrangements are within its legal authority.



## **CERTAIN PROVISIONS OF THE TENNESSEE VALLEY AUTHORITY ACT**

The following summarizes certain provisions of the Act.

### **Payments in Lieu of Taxes**

TVA is not subject to federal income taxes or to taxation by states or their subdivisions. However, the Act requires payments in lieu of taxes by TVA to states and counties in which it operates, in amounts equal to 5 percent of its gross revenues from the sale of power (exclusive of sales to federal agencies not for resale). In addition, the municipal distributors make tax equivalent payments, and the cooperative systems pay such taxes as are required by the various states.

### **Payments to the Treasury**

The Act requires TVA to make certain payments into the Treasury each year from Net Power Proceeds in excess of those required for debt service as a return on and reduction of the Appropriation Investment. Net Power Proceeds are defined as the remainder of TVA's Gross Power Revenues after deducting the cost of operating, maintaining and administering its power properties (including multiple-purpose properties in the proportion that multiple-purpose costs are allocated to power) and payments to states and counties in lieu of taxes, but before deducting depreciation accruals or other charges representing the amortization of capital expenditures, plus the net proceeds of the sale or other disposition of any power facility or interest therein. See Note 1 of Notes to Financial Statements.

The Act further provides that by March 31 of each year TVA shall pay into the Treasury the proceeds derived by TVA during the preceding fiscal year from all its activities, excepting such part as in the opinion of the Board is necessary in the conduct of certain specified activities including its business in generating, transmitting, and distributing electric energy, plus a continuing fund of \$1 million. This provision is subject, however, to a further provision in the Act permitting TVA to pledge and use its Net Power Proceeds for payment of the principal of and interest on its Evidences of Indebtedness, notwithstanding any other provision of law. Under the Basic Resolution, TVA pledges to and will apply Net Power Proceeds as set forth under "The Basic Resolution; Power Bonds and Discount Notes" — "Application of Net Power Proceeds".

### **Acquisition of Real Estate**

The Act empowers TVA to acquire real estate in the name of the United States of America by purchase or by exercise of the right of eminent domain, "and thereupon all such real estate shall be entrusted to the Corporation as the agent of the United States to accomplish the purposes of [the] Act". Since nearly all of TVA's properties, including powerhouses and transmission line rights-of-way, constitute real estate, title to which is held in the name of the United States and entrusted to TVA as agent of the United States, all references in this Statement to "TVA properties" and the like, and to the amounts invested therein, should be read and construed in the light of this provision of the Act.

## **THE BASIC RESOLUTION; POWER BONDS AND DISCOUNT NOTES**

TVA's Power Bonds are issued pursuant to Section 15d of the Act and pursuant to the Basic Resolution. At December 15, 1992, TVA had outstanding \$19,525 million principal amount of Power Bonds and \$1,900 million of Power Bonds that are being redeemed under in-substance defeasance arrangements, issued pursuant to the Basic Resolution and resolutions supplemental thereto.

Power Bonds may be issued only to provide capital for TVA's power program (including refunding any Evidences of Indebtedness issued for like purposes) and only as authorized by law at the time of issuance. Power Bonds are payable as to both principal and interest solely from Net Power Proceeds and are not obligations of, or guaranteed by, the United States of America. Net Power Proceeds for 1992, 1991, and 1990 were \$2.5 billion, \$2.6 billion and \$2.9 billion, respectively. Power Bonds of each series must be further authorized by Supplemental Resolution.

TVA intends from time to time to issue New Power Bonds with maturities and on terms determined in light of market conditions at the time of sale. The New Power Bonds may be sold to dealers or underwriters, who may resell the New Power Bonds in public offerings or otherwise. In addition, New Power Bonds may be sold by TVA directly or through agents.

The specific aggregate principal amount, maturity, interest rate or method for determining such rate, interest payment dates, if any, purchase price to be paid to TVA, any terms for redemption or other special terms, form and denomination of New Power Bonds, information as to any stock exchange listing, and the names of any dealers, underwriters or agents, together with a description of any amendments or supplements to the Basic Resolution in connection with the sale of New Power Bonds being offered at a particular time will be set forth in an offering circular, and any appropriate supplement thereto, together with the terms of such New Power Bonds.

TVA's Discount Notes are also issued pursuant to Section 15d of the Act and in accord with Section 2.5 of the Basic Resolution. As of December 15, 1992, TVA had outstanding approximately \$2.0 billion in Discount Notes.

The net proceeds received by TVA from the sale of Discount Notes will be used to assist in financing TVA's power program. The Discount Notes are payable solely from Net Power Proceeds (but may, at the option of TVA, be paid from the proceeds of refunding obligations or other funds legally available for such payment) and are not obligations of, or guaranteed by, the United States of America.

TVA intends to offer Discount Notes for sale on a continuous basis to a group of securities dealers selected by TVA, who will resell such notes. Discount Notes will be issued in such form and upon such terms and conditions as deemed appropriate by TVA. Certain information respecting Discount Notes will be set forth in a Discount Notes offering circular and any appropriate supplement thereto.

The following summary of certain provisions of the Basic Resolution does not purport to be complete and is qualified in its entirety by reference to the full text of the Basic Resolution.

#### **Application of Net Power Proceeds**

Section 2.3 of the Basic Resolution provides as follows:

Net Power Proceeds shall be applied, and the Corporation hereby specifically pledges them for application, first to payments due as interest on Bonds, on Bond Anticipation Obligations, and on any Evidences of Indebtedness issued pursuant to Section 2.5 which rank on a parity with Bonds as to interest; to payments of the principal due on Bonds for the payment of which other provisions have not been made; and to meeting requirements of sinking funds or other analogous funds under any Supplemental Resolutions. The remaining Net Power Proceeds shall be used only for:

(a) Required interest payments on any Evidences of Indebtedness issued pursuant to Section 2.5 which do not rank on a parity with Bonds as to interest.

(b) Required payments of or on account of principal of any Evidences of Indebtedness other than Bonds.

(c) Minimum payments into the United States Treasury required by the Act in repayment of and as a return on the Appropriation Investment.

(d) Investment in Power Assets, additional reductions of the Corporation's capital obligations, and other lawful purposes related to the Power Program; provided, however, that payments into the United States Treasury in any fiscal year in reduction of the Appropriation Investment in addition to the minimum amounts required for such purpose by the Act may be made only if there is a net reduction during such year in the dollar amount of outstanding Evidences of Indebtedness issued for capital purposes, and only to such extent that the percentage of aggregate reduction in the Appropriation Investment during such year does not exceed the percentage of net reduction during the year in the dollar amount of outstanding Evidences of Indebtedness issued for capital purposes.

Section 2.4 of the Basic Resolution provides as follows:

The Corporation, having first adopted a Supplemental Resolution authorizing the issuance of a series of Bonds and pending such issuance, may issue Bond Anticipation Obligations and renewals thereof (including Interim Obligations to the Secretary of the Treasury) to be paid from the proceeds of such series of Bonds when issued or from other funds that may be available for that purpose.

Section 2.5 of the Basic Resolution provides as follows:

To assist in financing its Power Program the Corporation may issue Evidences of Indebtedness other than Bonds and Bond Anticipation Obligations, which may be payable out of Net Power Proceeds subject to the provisions of Section 2.3 hereof, but no such other Evidences of Indebtedness shall rank on a parity with or ahead of the Bonds as to payments on account of the principal thereof or rank ahead of the Bonds as to payments on account of the interest thereon.

See “Amendments to the Basic Resolution to Become Effective in the Future” for a discussion of amendments that will affect the above provisions of Sections 2.3 and 2.5 of the Basic Resolution.

### **Rate Covenant**

Section 3.2 of the Basic Resolution provides as follows:

The Corporation shall fix, maintain and collect rates for power sufficient to meet in each fiscal year the requirements of that portion of the present subsection (f) of section 15d of the Act which states as follows:

The Corporation shall charge rates for power which will produce gross revenues sufficient to provide funds for operation, maintenance, and administration of its power system; payments to States and counties in lieu of taxes; debt service on outstanding bonds, including provision and maintenance of reserve funds and other funds established in connection therewith; payments to the Treasury as a return on the appropriation investment pursuant to subsection (e) hereof; payment to the Treasury of the repayment sums specified in subsection (e) hereof; and such additional margin as the Board may consider desirable for investment in power system assets, retirement of outstanding bonds in advance of maturity, additional reduction of appropriation investment, and other purposes connected with the Corporation’s power business, having due regard for the primary objectives of the Act, including the objective that power shall be sold at rates as low as are feasible.

For purposes of this Resolution, “debt service on outstanding bonds,” as used in the above provision of the Act, shall mean for any fiscal year the sum of all amounts required to be (a) paid during such fiscal year as interest on Evidences of Indebtedness, (b) accumulated in such fiscal year in any sinking or other analogous fund provided for in connection with any Evidences of Indebtedness, and (c) paid in such fiscal year on account of the principal of any Evidences of Indebtedness for the payment of which funds will not be available from sinking or other analogous funds, from the proceeds of refunding issues, or from other sources; provided, however, that for purposes of clause (c) of this definition Bond Anticipation Obligations and renewals thereof shall be deemed to mature in the proportions and at the times provided for paying or setting aside funds for the payment of the principal of the authorized Bonds in anticipation of the issuance of which such Bond Anticipation Obligations were issued.

The rates for power fixed by the Corporation shall also be sufficient so that they would cover all requirements of the above-quoted provision of subsection (f) of section 15d of the Act if, in such requirements, there were substituted for “debt service on outstanding bonds” for any fiscal year the amount which if applied annually for 35 years would retire, with interest at the rates applicable thereto, the originally issued amounts of all series of Bonds and other Evidences of Indebtedness, any part of which was outstanding on October 1 of such year.

### **Covenant for Protection of Bondholders’ Investment**

Under the Act and the Basic Resolution, TVA must, in each successive 5-year period beginning October 1, 1960, use either for the reduction of its capital obligations (including Evidences of Indebtedness

and the Appropriation Investment) or for investment in Power Assets an amount of Net Power Proceeds at least equal to the sum of (1) depreciation accruals and other charges representing the amortization of capital expenditures and (2) the net proceeds from any disposition of power facilities.

### **Depreciation**

The Basic Resolution requires TVA to accrue, in accordance with a recognized method, annual amounts for depreciation of its power properties (except land and other nondepreciable property) which will amortize their original cost less anticipated net salvage value within their expected useful lives. TVA has provided allowances for depreciation of its power properties (except land and other nondepreciable property) on a straight-line basis during their expected useful lives.

### **Issuance of Additional Bonds and Other Evidences of Indebtedness**

The Act presently limits the issuance of Evidences of Indebtedness by TVA to a total of \$30 billion outstanding at any one time to assist in financing TVA's power program (and for refunding). At September 30, 1992, TVA had approximately \$23.3 billion of outstanding Evidences of Indebtedness including \$2.1 billion of Power Bonds that are being redeemed under in-substance defeasance arrangements. The Basic Resolution permits the issuance of Power Bonds only to provide capital for TVA's power program, including the refunding of any Evidences of Indebtedness issued for that purpose.

Power Bonds, the terms and conditions of which may not be inconsistent with the Basic Resolution, must also be authorized by Supplemental Resolution.

The issuance of Power Bonds is limited as follows by the Basic Resolution:

Each Supplemental Resolution authorizing the issuance of Power Bonds must contain a finding by the Board that after the Power Bonds authorized thereby have been issued Gross Power Revenues will be adequate to meet the requirements of the Basic Resolution with respect to rates and the application of depreciation accruals. These requirements are described under "The Basic Resolution; Power Bonds and Discount Notes" — "Rate Covenant" and — "Covenant for Protection of Bondholders' Investment".

The amount of Power Bonds outstanding may not be increased unless net power income (after interest expense and depreciation charges but before payments as a return on or in reduction of the appropriation investment) for the latest five fiscal years has aggregated at least \$200 million. Moreover, that minimum requirement is increased by \$15 million for each ¼ percent (or major fraction thereof) over an average of 3¼ percent for those five years of the October 1 average interest rate payable by the United States Treasury upon its total marketable public obligations. TVA had aggregate net power income for the five fiscal years ended September 30, 1992, of \$991 million. Net power income is the same as Net Income in the Condensed Statement of Earnings shown on page 3. See "Amendments to the Basic Resolution to Become Effective in the Future".

Pending the issuance of Power Bonds authorized by a Supplemental Resolution, Bond Anticipation Obligations and renewals thereof (including Interim Obligations to the Secretary of the Treasury) may be issued, to be paid from the proceeds of such Power Bonds when issued or from other funds that may be available for that purpose.

Evidences of Indebtedness (such as Discount Notes) other than Power Bonds and Bond Anticipation Obligations may also be issued to assist in financing TVA's power program. They may be payable out of Net Power Proceeds subject to the provisions of Section 2.3 of the Basic Resolution. They may not rank on a parity with or ahead of the Power Bonds as to principal or ahead of them as to interest. See "Amendments to the Basic Resolution to Become Effective in the Future".

### **Mortgaging and Disposal of Power Properties**

TVA may not mortgage any part of its power properties and may not dispose of all or any substantial portion of such properties unless provision is made for a continuance of the interest, principal and sinking fund

payments due and to become due on all outstanding Evidences of Indebtedness, or for the retirement of such Evidences of Indebtedness.

### **Modifications of Resolutions and Outstanding Bonds**

The Basic Resolution provides for amendments to it, to any Supplemental Resolution, and to any outstanding Power Bonds. In summary, amendments of the respective rights and obligations of TVA and the bondholders may be made with the written consent of the holders of at least 66⅔ percent in principal amount of the outstanding Power Bonds to which the amendment applies; but changes in the maturity, principal amount, redemption premium, or rate of interest or maturity of any interest installment, with respect to any Power Bond, or in the above percentage for any such consent, cannot be made without the consent of the holder of such Power Bonds.

In addition, TVA may amend the Basic Resolution or any Supplemental Resolution without the consent of the bondholders in order (1) to close the Basic Resolution against the issuance of additional Power Bonds or to restrict such issuance by imposing additional conditions or restrictions; (2) to add other covenants and agreements to be observed by TVA or to eliminate any right, power or privilege conferred upon TVA by the Basic Resolution; (3) to modify any provisions to release TVA from any of its obligations, covenants, agreements, limitations, conditions or restrictions, provided that such modification or release shall not become effective with respect to any Power Bonds issued prior to the adoption of such amendment; (4) to correct any defect, ambiguity or inconsistency in, or to make provisions in regard to matters or questions arising under, the Basic Resolution or any Supplemental Resolution, so long as such amendments are not contrary to, or inconsistent with, the Basic Resolution or such Supplemental Resolution; or (5) to make any other modification or amendment which the Board by resolution determines will not materially and adversely affect the interests of holders of the Power Bonds.

### **Events of Default**

Any of the following shall be deemed an Event of Default under the Basic Resolution: (i) default in the payment of the principal or redemption price of any Power Bond when due and payable at maturity, by call for redemption, or otherwise; (ii) default in the payment of any installment of interest on any Power Bond when due and payable for more than 30 days; or (iii) failure of TVA to duly perform any other covenant, condition or agreement contained in the Power Bonds or in the Basic Resolution or any Supplemental Resolution for 90 days after written notice specifying such failure has been given to TVA by the holders of at least 5 percent in aggregate principal amount of the then outstanding Power Bonds.

Upon any such Event of Default, the holders of the Power Bonds may proceed to protect and enforce their respective rights, subject to the restrictions described below. The holders of at least 5 percent in aggregate principal amount of Power Bonds then outstanding shall, subject to certain restrictions, have the right and power to institute a proceeding (i) to enforce TVA's covenants and agreements, (ii) to enjoin any acts in violation of the rights of holders of Power Bonds, and (iii) to protect and enforce the rights of holders of Power Bonds. Power Bonds do not provide for acceleration upon an Event of Default.

Such holders have no right to bring any such action or proceeding against TVA unless they have given TVA written notice of an Event of Default, and TVA has had a reasonable opportunity to take appropriate corrective action with respect thereto and has failed or refused to do so.

Holders of a majority in aggregate principal amount of the outstanding Power Bonds have the right to direct the time, method and place of conducting any proceeding for any remedy available and may waive any default and its consequences, except a default in the payment of the principal of, premium, if any, or interest on any Power Bonds.

### **Amendments to the Basic Resolution to Become Effective in the Future**

On March 25, 1992, TVA adopted a resolution amending the Basic Resolution, entitled "Fourth Amendatory Resolution to Basic Tennessee Valley Authority Power Bond Resolution" (the "Fourth

Amendatory Resolution”). The amendments to the Basic Resolution made by the Fourth Amendatory Resolution will become effective only at such time as either (a) all Power Bonds issued prior to the date of adoption of the Fourth Amendatory Resolution cease to be outstanding (which will occur not later than November 15, 2029) or (b) the holders of at least 66⅔ percent of the principal amount of all then outstanding Power Bonds issued prior to the adoption of the Fourth Amendatory Resolution consent in writing to such amendments. At such times as the amendments become effective, they shall apply to all Power Bonds. The holders of Power Bonds offered after March 25, 1992, shall be deemed to have given their consent to the effect that, at any time after the conditions set forth in (a) or (b) above have been met, the amendments to the Basic Resolution made by the Fourth Amendatory Resolution will become effective in the manner provided. No further vote or consent of the holders of Power Bonds offered after March 25, 1992, is required to permit such amendments to the Basic Resolution to become effective.

The Fourth Amendatory Resolution, when effective in accordance with its terms and the terms of the Basic Resolution as described above, will (1) delete from the Basic Resolution the limitation on issuance of Power Bonds set forth in Section 3.4 thereof and (2) amend the Basic Resolution to permit issuance of other Evidences of Indebtedness under Section 2.5 thereof that rank on a parity with Power Bonds as to principal and interest.

Section 3.4 of the Basic Resolution presently restricts TVA’s ability to issue Power Bonds unless net power income (after interest expense and depreciation charges but before payments as a return on or in reduction of the Appropriation Investment) for the latest five fiscal years has aggregated at least \$200 million. That amount is increased by \$15 million for each ¼ percent (or major fraction thereof) by which the October 1 average interest rates payable by the United States Treasury upon its total marketable public obligations exceeds 3¼ percent. Upon the effectiveness of the Fourth Amendatory Resolution (which eliminates Section 3.4) Sections 3.5 through 3.10 will be renumbered as appropriate.

The foregoing is a brief summary of certain provisions of the Fourth Amendatory Resolution. This summary is not to be considered a full statement of the terms of the Fourth Amendatory Resolution and, accordingly, is qualified by reference to the Fourth Amendatory Resolution. Copies in reasonable quantity of the Fourth Amendatory Resolution may be obtained upon written request directed to Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902, Attention: Vice President and Treasurer, or by calling (615) 632-3366.

## **Stripping**

Certain series of the Corporation’s New Power Bonds (the “Eligible New Power Bonds”) may be separated (“stripped”) into their Interest and Principal Components (as hereinafter defined) and maintained as such on the book-entry records of the Federal Reserve Banks. The components of each Eligible New Power Bond are: each future interest payment prior to the first date, if any, on which the Eligible New Power Bond is subject to redemption at the option of the Corporation (each an “Interest Component”); and the principal payment plus any interest payments on or after the first date, if any, on which the Eligible New Power Bond is subject to redemption at the option of the Corporation (the “Principal Component”). Each Interest Component and the Principal Component will receive an identifying designation and CUSIP number. A request for separation of an Eligible New Power Bond into its Interest and Principal Components must be made to the Federal Reserve Bank of New York (“FRBNY”). The FRBNY will charge a fee. For an Eligible New Power Bond to be stripped into its Interest and Principal Components as described above, the principal amount of the Eligible New Power Bond must be in an amount that, based on the stated interest rate of the Eligible New Power Bonds, will produce a semi-annual interest payment of \$1,000 or multiples thereof. The minimum principal amounts required to strip an Eligible New Power Bond at various interest rates, as well as the interest payments corresponding to those minimum principal amounts, may be obtained by calling the Corporation’s Vice President and Treasurer at (615) 632-3366 and the minimum principal amount required to strip an Eligible New Power Bond will be disclosed in a related offering circular. Interest and Principal Components will be obligations of TVA payable solely from TVA’s Net Power Proceeds.

Once a New Power Bond has been stripped into its Interest and Principal Components, the Interest and Principal Components may be maintained and transferred on the book-entry system of the Federal Reserve Banks in integral multiples of \$1,000. Payments on the Interest and Principal Components will be made on the applicable payment dates on the related New Power Bonds by crediting holders' accounts at the FRBNY. At the request of a holder and on the holder's payment of a fee (currently the FRBNY's fee applicable to on-line book-entry securities transfers), the FRBNY will restore ("reconstitute") the unmatured Interest and Principal Components of a stripped New Power Bond to their fully constituted form. Holders wishing to reconstitute the unmatured Interest and Principal Components of a stripped New Power Bond to their fully constituted form must (i) produce all outstanding Interest and Principal Components for a stripped New Power Bond, and (ii) comply with all applicable requirements of the FRBNY governing the stripping and reconstitution of securities.

The offering price of the Interest and Principal Components could be at substantial discounts from their face amounts and, as a result, these components may be subject to greater interest rate volatility than the fully constituted New Power Bonds or other obligations bearing current interest. There also may be a less liquid secondary market for such Interest and Principal Components as compared to the secondary market for the fully constituted New Power Bonds.

The Interest and Principal Components of Eligible New Power Bonds could be subject to restrictions or requirements with respect to the legality of investment therein which do not apply to New Power Bonds held in their fully constituted form. Thus, each person or entity is advised to consult with their own counsel with respect to the legality of investment in Interest and Principal Components.

#### INDEPENDENT ACCOUNTANTS

The financial statements of TVA at September 30, 1992, and 1991 and for each of the three fiscal years in the period ended September 30, 1992, appended hereto as part of the Information Statement have been audited by Coopers & Lybrand, independent accountants, as set forth in their report, dated October 16, 1992, which report is also appended hereto.

Any statements in this Information Statement involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Information Statement is not to be construed as a contract or agreement with the purchaser of any of the New Power Bonds or Discount Notes.

This Information Statement has been approved by a duly authorized officer of the Tennessee Valley Authority.

Tennessee Valley Authority

By: /s/ WILLIAM F. MALEC

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William F. Malec  
*Executive Vice President  
and Chief Financial Officer*

Dated December 15, 1992

**TENNESSEE VALLEY AUTHORITY**  
**FINANCIAL STATEMENTS**  
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**FINANCIAL HIGHLIGHTS**  
**AS OF AND FOR THE YEARS ENDED SEPTEMBER 30**  
**(Millions of dollars)**

	<u>1992</u>	<u>1991</u>	<u>Percent Change</u>
Operating Revenues .....	5,065	5,136	(1.4)
Operating Expenses .....	3,198	3,047	5.0
Operating Income .....	1,867	2,089	(10.6)
Interest Expense, exclusive of AFUDC .....	1,695	1,677	1.1
Net Income .....	120	286	(58.0)
Total Assets .....	30,487	29,314	4.0
Capitalization			
Proprietary Capital .....	4,743	4,811	(1.4)
Long-Term Debt .....	19,204	18,374	4.5
Total Capitalization .....	23,947	23,185	3.3

**SYSTEM STATISTICS**  
**AS OF AND FOR THE YEARS ENDED SEPTEMBER 30**  
**(Millions of kilowatt-hours)**

	<u>1992</u>	<u>1991</u>	<u>Percent Change</u>
System Input			
System Generation			
Hydro, including Pumped Storage .....	16,165	18,264	(11.5)
Coal .....	83,531	79,504	5.1
Nuclear .....	21,977	18,634	17.9
Combustion Turbine .....	71	34	108.8
Total Net Generation .....	121,744	116,436	4.6
Purchased .....	508	1,077	(52.8)
Net Interchange and Wheeling .....	(2,103)	2,893	(172.7)
Total System Input .....	120,149	120,406	(.2)
<hr/>			
System Output			
Sales			
Municipalities and Cooperatives .....	93,622	92,848	.8
Federal Agencies .....	2,204	2,173	1.4
Industries .....	16,576	17,437	(4.9)
Electric Utilities .....	—	49	(100.0)
Total Sales .....	112,402	112,507	(.1)
Losses .....	7,747	7,899	(1.9)
Total System Output .....	120,149	120,406	(.2)
<hr/>			
Dependable Capacity in Service (megawatts) .....	25,618	25,779	(.6)
Percent of Average Gross Generation to Dependable			
Capacity in Service .....	57.88	55.30	4.7
<hr/>			
System Peak Load (megawatts) .....	21,980	22,081	(.5)
Annual Load Factor .....	63.06	60.20	4.8
<hr/>			
Percent Dependable Capacity by Fuel Source			
Coal .....	59	59	
Hydro .....	19	19	
Combustion Turbine .....	9	9	
Nuclear in Service .....	13	13	

**TENNESSEE VALLEY AUTHORITY  
POWER PROGRAM**

**STATEMENTS OF OPERATIONS AND RETAINED EARNINGS  
For the Years Ended September 30, 1992, 1991, and 1990**

	<u>1992</u>	<u>1991</u>	<u>1990</u>
	(In Millions)		
OPERATING REVENUES.....	\$5,065	\$5,136	\$5,339
OPERATING EXPENSES			
Production			
Fuel and purchased power, net .....	1,354	1,379	1,381
Other .....	603	537	511
Provision for depreciation.....	390	350	341
Amortization of canceled nuclear units and deferred nuclear costs .....	115	49	315
Tax-equivalent payments .....	241	243	233
General and administrative .....	362	363	313
Other operating expenses .....	133	126	127
Total operating expenses .....	<u>3,198</u>	<u>3,047</u>	<u>3,221</u>
Operating income .....	<u>1,867</u>	<u>2,089</u>	<u>2,118</u>
OTHER INCOME AND DEDUCTIONS			
Interest income .....	22	24	38
Charges related to:			
Nuclear fuel.....	(109)	—	—
Canceled nuclear generating units and other deferred costs .....	—	—	(1,118)
Other .....	—	—	(58)
Total other income and deductions.....	<u>(87)</u>	<u>24</u>	<u>(1,138)</u>
Income before interest charges .....	<u>1,780</u>	<u>2,113</u>	<u>980</u>
INTEREST CHARGES			
Interest expense.....	1,695	1,677	1,670
Allowance for funds used during construction .....	(35)	(73)	(303)
Net interest charges .....	<u>1,660</u>	<u>1,604</u>	<u>1,367</u>
Income (loss) before cumulative effect of accounting change .....	<u>120</u>	<u>509</u>	<u>(387)</u>
CUMULATIVE EFFECT OF POSTRETIREMENT BENEFITS CHANGE	—	(223)	—
NET INCOME (LOSS) .....	120	286	(387)
Return on appropriation investment .....	57	64	68
Increase (decrease) in retained earnings reinvested .....	63	222	(455)
Retained earnings reinvested at beginning of period .....	<u>2,999</u>	<u>2,777</u>	<u>3,232</u>
Retained earnings reinvested at end of period .....	<u>\$3,062</u>	<u>\$2,999</u>	<u>\$2,777</u>

The accompanying notes are an integral part of these financial statements.

**TENNESSEE VALLEY AUTHORITY  
NONPOWER PROGRAMS**

**STATEMENTS OF NET EXPENSE AND ACCUMULATED NET EXPENSE  
For the Years Ended September 30, 1992, 1991, and 1990**

	<u>1992</u>	<u>1991</u>	<u>1990</u>
	(In Millions)		
STEWARDSHIP .....	\$ 71	\$ 63	\$ 58
WATER AND LAND .....	9	8	14
LAND BETWEEN THE LAKES .....	4	4	4
RURAL DEVELOPMENT .....	22	14	30
NATIONAL FERTILIZER AND ENVIRONMENTAL RESEARCH CENTER.....	36	37	40
COAL GASIFICATION .....	113	—	—
OTHER EXPENSE, NET .....	<u>(4)</u>	<u>(1)</u>	<u>1</u>
NET EXPENSE .....	251	125	147
Accumulated net expense at beginning of period .....	<u>2,424</u>	<u>2,299</u>	<u>2,152</u>
Accumulated net expense at end of period .....	<u>\$2,675</u>	<u>\$2,424</u>	<u>\$2,299</u>

The accompanying notes are an integral part of these financial statements.

**TENNESSEE VALLEY AUTHORITY**  
**(A CORPORATION WHOLLY OWNED BY THE UNITED STATES OF AMERICA)**

**BALANCE SHEETS**  
**at September 30, 1992 and 1991**

	Power program		All programs	
	1992	1991	1992	1991
	(In Millions)			
ASSETS				
PROPERTY, PLANT, AND EQUIPMENT				
Completed plant .....	\$14,075	\$13,822	\$15,125	\$14,982
Less accumulated depreciation and depletion .....	4,935	4,612	5,188	4,853
Completed plant, net .....	9,140	9,210	9,937	10,129
Construction in progress .....	7,228	6,091	7,341	6,195
Deferred nuclear generating units .....	6,037	5,928	6,037	5,928
Capital lease assets .....	2,488	2,642	2,488	2,642
Total .....	24,893	23,871	25,803	24,894
INVESTMENT FUNDS, at accreted cost .....	188	170	188	170
CURRENT ASSETS				
Cash .....	157	186	342	328
Short-term investments .....	453	459	453	459
Accounts receivable .....	693	697	717	776
Inventories, at average cost .....	421	474	421	474
Total .....	1,724	1,816	1,933	2,037
DEFERRED CHARGES AND OTHER ASSETS				
Loans and other long-term receivables .....	291	295	340	344
Deferred charges — nuclear recovery and other .....	1,161	1,006	1,161	1,006
Unamortized debt issue ad reacquisition costs .....	1,062	863	1,062	863
Total .....	2,514	2,164	2,563	2,213
Total assets .....	\$29,319	\$28,021	\$30,487	\$29,314
CAPITALIZATION AND LIABILITIES				
CAPITALIZATION				
Proprietary capital				
Appropriation investment, net .....	\$ 688	\$ 708	\$ 4,356	\$ 4,236
Retained earnings reinvested in the power program .....	3,062	2,999	3,062	2,999
Accumulated net expense of nonpower programs .....	—	—	(2,675)	(2,424)
Total .....	3,750	3,707	4,743	4,811
Long-term debt .....	19,204	18,374	19,204	18,374
Total .....	22,954	22,081	23,947	23,185
OTHER LIABILITIES				
Capital lease obligations .....	2,268	2,397	2,268	2,397
Decommissioning of nuclear plant .....	264	264	264	264
Other accrued liabilities .....	461	466	461	466
Total .....	2,993	3,127	2,993	3,127
CURRENT LIABILITIES				
Short-term debt .....	1,707	1,264	1,707	1,264
Current maturities of long-term debt .....	—	70	—	70
Current portion of capital lease obligations .....	220	245	220	245
Accounts payable .....	884	645	1,033	808
Payrolls and other accrued costs .....	82	72	108	98
Interest accrued .....	479	517	479	517
Total .....	3,372	2,813	3,547	3,002
COMMITMENTS AND CONTINGENCIES (Note 9)				
Total capitalization and liabilities .....	\$29,319	\$28,021	\$30,487	\$29,314

The accompanying notes are an integral part of these financial statements.

**TENNESSEE VALLEY AUTHORITY**  
**STATEMENTS OF CASH FLOWS**  
**For the Years Ended September 30, 1992, 1991, and 1990**

	Power program			All programs		
	1992	1991	1990	1992	1991	1990
	(In Millions)					
CASH FLOWS FROM OPERATING ACTIVITIES						
Net power income (loss) .....	\$ 120	\$ 286	\$ (387)	\$ 120	\$ 286	\$ (387)
Net expense of nonpower programs .....	—	—	—	(251)	(125)	(147)
Items not requiring (providing) cash						
Provision for depreciation .....	390	350	341	400	361	350
Amortization of canceled nuclear units and deferred nuclear costs .....	115	49	315	115	49	315
Allowance for funds used during construction .....	(35)	(73)	(303)	(35)	(73)	(303)
Charges related to losses on canceled nuclear generating units, other deferred costs, and coal gasification.....	109	—	1,118	222	—	1,118
Cumulative effect of postretirement benefits.....	—	223	—	—	223	—
Other, net .....	82	69	111	82	69	111
Changes in current assets and liabilities						
Accounts receivable, net .....	4	34	(25)	60	(29)	(28)
Inventories.....	53	24	(31)	53	27	(24)
Accounts payable and accrued liabilities .....	249	70	76	235	153	94
Interest payable .....	(38)	—	135	(38)	—	135
Other .....	(1)	—	12	(1)	—	12
Net cash provided by operating activities .....	1,048	1,032	1,362	962	941	1,246
CASH FLOWS FROM INVESTING ACTIVITIES						
Construction expenditures .....	(1,689)	(1,271)	(1,814)	(1,700)	(1,282)	(1,830)
Allowance for funds used during construction .....	35	73	303	35	73	303
Transfer of certain costs of canceled nuclear generating units .....	—	—	410	—	—	410
Other, net .....	(288)	(173)	(27)	(287)	(178)	5
Cash construction expenditures .....	(1,942)	(1,371)	(1,128)	(1,952)	(1,387)	(1,112)
Investments .....	10	(306)	2	10	(306)	2
Net cash used in investing activities .....	(1,932)	(1,677)	(1,126)	(1,942)	(1,693)	(1,110)
CASH FLOWS FROM FINANCING ACTIVITIES						
Long-term debt						
Issues .....	6,450	—	8,000	6,450	—	8,000
Redemptions .....	(3,980)	(150)	(400)	(3,980)	(150)	(400)
Debt defeased .....	(1,596)	—	(6,100)	(1,596)	—	(6,100)
Short-term borrowings, net .....	443	1,057	(685)	443	1,057	(685)
Borrowing expenses, net .....	(385)	3	(1,120)	(385)	3	(1,120)
Congressional appropriations and transfers .....	—	—	—	139	135	120
Payments to U.S. Treasury .....	(77)	(84)	(88)	(77)	(84)	(88)
Net cash provided by (used in) financing activities .....	855	826	(393)	994	961	(273)
Net change in cash and cash equivalents .....	(29)	181	(157)	14	209	(137)
Cash and cash equivalents at beginning of year .....	186	5	162	328	119	256
Cash and cash equivalents at end of year .....	\$ 157	\$ 186	\$ 5	\$ 342	\$ 328	\$ 119

The accompanying notes are an integral part of these financial statements.

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS**

**1. Summary of significant accounting policies**

*General* — The Tennessee Valley Authority (TVA) is a wholly owned corporate agency and instrumentality of the United States established by the TVA Act with the objective of developing the resources of the Tennessee Valley region in order to strengthen the regional and national economy and the national defense by providing: (1) an ample supply of power within the region; (2) navigable channels and flood control for the Tennessee River System; and (3) agricultural and industrial development and improved forestry in the region.

TVA's programs fall into two types of activities - the power program and the nonpower programs. Substantially all TVA revenues and assets are attributable to the power program. Most of the funding for TVA's nonpower programs, like similar services provided by the federal government in other regions of the country, is provided by Congressional appropriations. Certain nonpower activities are also funded by various revenues and user fees. The power program is required to be self-supporting from power revenues.

Power rates are established by the TVA Board of Directors as authorized by the Act. The Act requires TVA to charge rates for power which, among other things, will produce gross revenues sufficient to provide funds for operation, maintenance, and administration of its power system; payments to states in lieu of taxes; debt service on outstanding indebtedness, and annual payments to the U.S. Treasury in repayment of and as a return on the Government's appropriation investment in TVA power facilities.

Financial accounts for the two types of TVA activities - power and nonpower - are kept separately. Power accounts are generally maintained in accordance with the uniform system of accounts prescribed by the Federal Energy Regulatory Commission. Nonpower accounts are maintained in accordance with applicable generally accepted accounting principles. Prior year data presented in the financial statements reflect certain reclassifications to conform with current year presentations.

*Property, plant, and equipment and depreciation* — Additions to plant are recorded at cost, which include direct and indirect costs such as general engineering, a portion of corporate overhead, and an allowance for funds used during construction. The cost of betterments is capitalized and the cost of current repairs and minor replacements is charged to operating expense. The TVA Act requires TVA's Board of Directors to allocate between the power and nonpower programs, subject to the approval of the President of the United States, the cost of completed multipurpose projects. The original cost of property retired, together with removal costs less salvage value, is charged to accumulated depreciation. Straight-line depreciation is provided for substantially on a composite basis. Rates of depreciation are derived from engineering studies of useful life. The average of the composite rates that were applied individually to each major class of plant for fiscal years 1992, 1991, and 1990 was 2.97 percent, 2.75 percent, and 2.78 percent, respectively.

Provision for decommissioning costs of nuclear generating units is based on a 1990 engineering study of useful life and estimated costs based on the dismantling/removal method. The amount stated in 1990 dollars for each of the Browns Ferry units is \$190 million, and \$150 million for each of the Sequoyah units. The excess of the annual decommissioning provision over earnings from the investments designated for funding decommission costs is recovered in rates through charges to depreciation expense. Effective for fiscal year 1991, the decommissioning accruals were adjusted to reflect revised estimated useful lives for the completed units. This resulted in an estimated five year deferral to the existing policy which reduced decommissioning expense by \$42 million in 1992 and \$40 million in 1991.

The practice of capitalizing an allowance for funds used during construction is followed in the power program. The allowance is applicable to construction in progress excluding deferred nuclear generating units and at Watts Bar 1, which is substantially complete. The amount of interest capitalized is limited to the amount of depreciation and certain other noncash charges less the amount of the repayment of the appropriation investment to the U.S. Treasury.

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

*Nuclear fuel* — The cost of nuclear fuel including disposal, is amortized on the basis of generation and charged to fuel expense. During 1992 TVA began converting fuel originally fabricated for use at the Bellefonte Nuclear Plant to a form which can be used at the Browns Ferry and Sequoyah Nuclear Plants. In conjunction with this conversion, TVA has determined the costs of original fabrication and subsequent defabrication provide no future benefit. Accordingly the \$91 million aggregate cost will not be recovered from future customers and has been recognized as a charge in the 1992 statement of operations. TVA has also determined that certain failed fuel at Browns Ferry 2 has no recoverable value, and the \$18 million cost has been charged to the 1992 statement of operations.

*Investment funds* — Certain power funds have been invested in order to provide funding for decommissioning nuclear power plants. Investments are carried at cost, adjusted for amortization of premiums and accretion of discounts at the yield rate over the life of each instrument.

*Short-term investments* — Funds are invested in commercial paper, repurchase agreements, and medium-term notes with maturities of 364 days or less to manage working capital levels. Investments are carried at cost, which approximates market value.

*Deferred nuclear recovery costs* — The costs incurred by TVA at nonoperating completed nuclear production plants to accomplish corrective actions necessary to obtain the Nuclear Regulatory Commission's approval to restart the plants are deferred and charged to operations over a ten-year period beginning with the restart of each idled unit.

*Other deferred charges* — Certain costs associated with uranium and coal mine and mill development activities, canceled nuclear plants and annual aggregate depreciation and fuel interest charges for Browns Ferry 1 and 2 had been deferred prior to fiscal year 1990. In August 1990 the Board elected not to recover these deferred amounts from future customers. Accordingly, the respective unamortized balances were charged to the 1990 statement of operations.

*Debt issuance costs* — Issue and reacquisition expenses, call premiums and other related costs, and discounts on power borrowings are amortized and accreted, respectively, on a straight-line basis over the term of the related outstanding securities.

*Tax-equivalent payments* — The TVA Act requires TVA to make payments to states and local governments in which the power operations of the corporation are carried out. The basic amount is five percent of gross revenues from the sale of power to other than Federal agencies during the preceding year, with the provision for minimum payments under certain circumstances.

*Statements of cash flows* — Cash equivalents include the cash available in commercial bank accounts and U.S. Treasury accounts. During fiscal years 1992, 1991, and 1990, interest paid (net of amount capitalized) was \$1,625 million, \$1,546 million, and \$1,179 million, respectively. Capital lease additions including capitalized interest were \$156 million, \$206 million and \$194 million in fiscal years 1992, 1991 and 1990, respectively.



**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

**2. Nuclear power program**

The nuclear power program at September 30, 1992 consists of nine generating units at four locations with investments as follows and in the status indicated:

	Capacity (Megawatts)	Completed Plant, Net	Construction in Progress	Deferred	Fuel Investment
			(In Millions)		
Sequoyah . . . . .	2,442	\$1,691	\$ 127	\$ —	\$ 267
Browns Ferry . . . . .	3,456	1,619	335	—	380
Watts Bar . . . . .	2,540	—	5,553	1,623	320
Bellefonte . . . . .	2,664	—	—	4,414	330
Raw Materials . . . . .	—	—	—	—	964
Total . . . . .	<u>11,102</u>	<u>\$3,310</u>	<u>\$6,015</u>	<u>\$6,037</u>	<u>\$2,261</u>

The completed units at Browns Ferry were taken off-line in March 1985 for plant modifications and regulatory improvements. Browns Ferry 2 returned to commercial operation during August 1991. TVA plans to return Browns Ferry 3 and 1 to commercial operation in 1994 and 1996, respectively.

Construction of Watts Bar 1 is substantially complete. In December 1990, TVA halted construction-related work to correct deficiencies found in work control processes. Construction-related work was resumed in November 1991 and TVA plans to bring Watts Bar 1 into commercial operation during 1994. While construction work has resumed, no assurance can be given that further delays in bringing the unit into operation will not occur. Interest capitalization for Watts Bar 1 was suspended in October 1990 since the unit is substantially complete. Capitalized interest was \$244 million in fiscal year 1990.

On October 1, 1988 TVA suspended construction activities at Watts Bar 2 because of a reduction in the forecasted load growth, and the unit is currently in layup. Bellefonte 1 and 2 were deferred in 1988 and 1985, respectively. Although no formal action has been taken to resume construction of these units, TVA has developed a systematic approach to coordinate placing these three units in service to meet forecasted generation capacity requirements. TVA plans to place Watts Bar 2 in service in 1999 and Bellefonte 1 and 2 in service in 1998 and 2002 respectively. Budgeted 1993 expenditures for these three units, which are \$134 million, are limited to certain licensing, design, layup, and maintenance activities. Reactivation of Bellefonte 1 as an active construction project is planned for fiscal year 1993. For financial reporting purposes, the cost of these three units is presented as deferred nuclear generating units. Interest capitalization for Watts Bar 2 and Bellefonte 1 and 2 was suspended in 1988. The total project costs to complete these suspended construction and deferred units are under review and cannot be estimated with certainty until firm completion dates are established.

All units not operating are expected to be completed as indicated. If abandonment of any of these units should occur, TVA would recover these costs (including fuel) through rates charged to future customers.

*Nuclear fuel disposal* — TVA has contracted with the United States Department of Energy (DOE) for disposal of spent nuclear fuel. Under the terms of the contract, TVA is required to pay a fee to the DOE of one mill per kilowatt-hour on the net electricity generated by each of its reactors. Total fees charged to operations for the years ended September 30, 1992, 1991, and 1990 were \$19 million, \$19 million, and \$15 million, respectively.

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

**3. Completed plant**

Completed plant for the Power Program and All Programs stated at gross cost consists of the following at September 30, 1992 and 1991:

	<b>1992</b>		<b>1991</b>	
	<u>Power Program</u>	<u>All Programs</u>	<u>Power Program</u>	<u>All Programs</u>
	(Millions)			
Steam production plants . . . .	\$ 4,822	\$ 4,822	\$ 4,651	\$ 4,651
Nuclear Production plants . . .	4,389	4,389	4,348	4,348
Transmission plants . . . . .	2,119	2,119	2,082	2,082
Multipurpose dams . . . . .	628	1,527	614	1,512
Single-purpose dams . . . . .	466	466	459	459
Other . . . . .	1,651	1,802	1,668	1,930
Total . . . . .	<u>\$14,075</u>	<u>\$15,125</u>	<u>\$13,822</u>	<u>\$14,982</u>

**4. Leases**

Under an agreement entered into in fiscal year 1980, TVA sells and leases back nuclear fuel. TVA also leases property, plant, and equipment under lease agreements with terms ranging from one to thirty years. Most of the agreements include purchase options and/or renewal options which cover substantially all the economic lives of the properties.

The following is a summary of obligations under capital and noncancelable operating lease agreements in effect at September 30, 1992 and 1991:

**CAPITAL LEASES**

	<u>1992</u>	<u>1991</u>
	(Millions)	
Nuclear fuel		
Assets under capital lease . . . . .	\$3,475	\$3,433
Accumulated provision for amortization . . . . .	1,218	1,027
Net nuclear fuel . . . . .	<u>2,257</u>	<u>2,406</u>
General plant		
Assets under capital lease . . . . .	255	257
Accumulated provision for amortization . . . . .	24	21
Net general plant . . . . .	<u>231</u>	<u>236</u>
Total net properties . . . . .	<u>\$2,488</u>	<u>\$2,642</u>
Obligations under capital leases . . . . .	<u>\$2,488</u>	<u>\$2,642</u>

Financing costs on nuclear fuel are capitalized until the fuel is placed into production. Net nuclear fuel includes capitalized interest of \$944 million and \$948 million as of September 30, 1992 and 1991, respectively.

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

**FUTURE MINIMUM LEASE PAYMENTS**

<u>Fiscal Period</u>	<u>General Plant Capital Leases</u>	<u>Noncancelable Operating Leases</u>
	(Millions)	
1993 .....	\$ 39	\$ 6
1994 .....	39	6
1995 .....	40	5
1996 .....	40	4
1997 .....	37	2
Thereafter .....	<u>480</u>	<u>9</u>
Total future minimum lease payments .....	675	<u>\$32</u>
Less interest element included .....	<u>444</u>	
Present value of future minimum lease payments .....	<u>\$231</u>	

Payments under nuclear fuel lease, which are based on fuel burns, are estimated to be (in millions) \$215, \$305, \$323, \$369, and \$500 including financing charges, for fiscal years 1993-1997, respectively.

Amortization of capital leases, including nuclear fuel, for the years ended September 30, 1992, 1991, and 1990 was (in millions) \$193, \$140, and \$110, respectively. Operating expenses for the same respective periods included finance charges for capital leases in the amounts of (in millions) \$67, \$70, and \$65.

Annual rents under one capital lease range from \$2.7 million to \$51.9 million under the lease terms now in effect. Operating expenses include annual provisions for the levelization of these rentals over the twenty-five year term of the lease which expires in 2011. The accrued liability for future lease payments is \$152 million at September 30, 1992.

**5. Appropriation investment**

Changes in the appropriation investment during the years ended September 30, 1992, 1991, and 1990 were:

	<u>September 30</u>		
	<u>1992</u>	<u>1991</u>	<u>1990</u>
	(Millions)		
<b>Power Program</b>			
Congressional Appropriations .....	\$1,419	\$1,419	\$1,419
Transfers of Property from other Federal agencies .....	24	24	24
Repayments to General Fund of the U.S. Treasury .....	<u>(755)</u>	<u>(735)</u>	<u>(715)</u>
Net Appropriation Investment .....	<u>\$ 688</u>	<u>\$ 708</u>	<u>\$ 728</u>
<b>All Programs</b>			
Congressional Appropriations .....	\$5,090	\$4,951	\$4,816
Transfers of Property from other Federal agencies .....	63	62	62
Repayments to General Fund of the U.S. Treasury .....	<u>(797)</u>	<u>(777)</u>	<u>(757)</u>
Net Appropriation Investment .....	<u>\$4,356</u>	<u>\$4,236</u>	<u>\$4,121</u>

The TVA Act requires the payment to the U.S. Treasury from net power proceeds of a return on the net appropriation investment in power facilities plus repayment of such investment with annual payments of \$20 million until a total of \$1 billion has been repaid. The amount of return paid in 1992 was \$57 million and is based on the appropriation investment as of the beginning of the year and the computed average interest rate

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

payable by the U.S. Treasury on its total marketable public obligations as of the same date. The payments required by the TVA Act may be deferred under certain circumstances for not more than two years. Repayments toward the \$1 billion total \$570 million at September 30, 1992. Return on investment payments total \$2,090 million as of September 30, 1992. Congressional appropriations for nonpower programs for fiscal year 1993 are \$135 million.

**6. Borrowing authority**

The TVA Act authorizes TVA to issue bonds, notes, and other evidences of indebtedness up to a total of \$30 billion outstanding at any one time (including defeased debt). TVA must meet certain cash flow and earnings tests that are contained in the TVA Act and the Basic TVA Power Bond Resolution. Debt service on these obligations, which is payable solely from TVA's net power proceeds, has precedence over the payment to the U.S. Treasury described in Note 5. Issues outstanding (excluding defeased debt) at September 30, 1992 and 1991, consist of the following:

	<u>1992</u>	<u>1991</u>
	(Millions)	
Long-term debt		
Held by the public		
Maturing in 1992 — 6.375% .....	\$ —	\$ 60
Maturing in 1994 — 8.25% .....	—	1,000
Maturing in 1995 — 4.75% .....	1,000	—
Maturing in 1997 — 8.25% .....	1,500	1,500
Maturing in 1997 — 6.00% .....	1,000	—
Maturing 1999 through 2042 — 6.25% to 8.75% .....	9,950	6,750
	<u>13,450</u>	<u>9,310</u>
Federal Financing Bank		
Maturing 2003 through 2017 — 7.285% to 11.695% .....	6,075	9,275
Total long-term debt .....	19,525	18,585
Less unamortized discount .....	<u>321</u>	<u>211</u>
Net long-term debt .....	<u>\$19,204</u>	<u>\$18,374</u>
Short-term debt		
Held by public		
Discount notes (net of discount) .....	\$ 1,557	\$ 1,114
Current portion of long-term debt .....	—	70
U.S. Treasury .....	150	150
Total short-term debt .....	<u>\$ 1,707</u>	<u>\$ 1,334</u>
Total debt .....	<u>\$20,911</u>	<u>\$19,708</u>

Between October 1989 and September 1992, TVA sold \$13.45 billion in Power Bonds to the public, using the proceeds to advance refund \$11.75 billion in previously issued long-term debt. \$10.95 billion of the bond issues held by the public are redeemable in whole or in part at TVA's option on call dates ranging from September 1993 to April 2012 at call premiums ranging from 100 percent to 106.2 percent of the principal amount. TVA incurred premiums totaling \$1.0 billion to effect these advance refundings, which are being deferred and recognized as an expense ratably through the maturity dates of the new debt issues. \$7.7 billion of these advance refundings were effected through insubstance defeasance transactions, wherein TVA transferred sufficient funds to establish irrevocable trusts to hold securities which are scheduled to earn

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

interest and mature in amounts sufficient to meet debt service requirements. Defeased debt outstanding at September 30, 1992 and 1991 was \$2.1 billion and \$2.6 billion, respectively.

The borrowings from the public represented a departure from the practice since 1974 of borrowing only from FFB, excluding advances from the U.S. Treasury. FFB advised TVA that FFB policy does not permit Federal agencies which access public markets financing also to freely access FFB financing. FFB will continue to make available up to \$2.5 billion in financing until October 1993 for TVA's nuclear fuel lease arrangement. Outstanding long-term debt held by FFB is not affected by this change.

The interest rate on short-term debt owed to the U. S. Treasury as of September 30, 1992, was 3.71 percent and the weighted average rate on short-term debt outstanding in the public market as of September 30, 1992, was 3.41 percent.

During fiscal years 1992, 1991, and 1990, the maximum amounts of short-term borrowings outstanding (in millions) were \$1,826, \$1,372 and \$680, respectively, and the average amounts (and weighted average interest rates) of such borrowings were approximately (in millions) \$1,458 (5.1 percent), \$555 (6.17 percent), and \$290 (8.033 percent), respectively.

## 7. Retirement Plans

*Pension Plan* — TVA has a contributory, defined benefit plan covering most full-time employees. Plan assets are primarily stocks and bonds. TVA contributes to the plan such amounts as are necessary on an actuarial basis to provide assets sufficient to meet the obligations for benefits. The pension amount is based on the member's years of creditable service, average base pay for the highest three consecutive years, and the pension rate for the member's age, less a Social Security offset.

The components of pension expense for fiscal years 1992, 1991, and 1990 were:

	<u>1992</u>	<u>1991</u>	<u>1990</u>
	(Millions)		
Service cost . . . . .	\$ 72	\$ 71	\$ 68
Interest cost on projected benefit obligation . . . . .	237	214	204
Actual return on assets . . . . .	(355)	(565)	224
Net amortization and deferral . . . . .	<u>71</u>	<u>346</u>	<u>(430)</u>
Net pension costs . . . . .	<u>\$ 25</u>	<u>\$ 66</u>	<u>\$ 66</u>

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

The plan's funded status was:

	<u>1992</u>	<u>1991</u>	<u>1990</u>
	(Millions)		
Actuarial present value of benefit obligations:			
Vested benefit obligation .....	\$(2,492)	\$(2,304)	\$(2,134)
Nonvested benefits .....	(61)	(61)	(59)
Accumulated benefit obligation .....	(2,553)	(2,365)	(2,193)
Effects of projected future compensation .....	(397)	(367)	(358)
Projected benefit obligation .....	(2,950)	(2,732)	(2,551)
Plan assets at fair value .....	3,286	3,016	2,451
Excess (deficit) of plan assets over projected benefit obligation ..	336	284	(100)
Unrecognized net loss (gain) .....	(341)	(315)	88
Unrecognized net obligation being amortized over 15 years beginning October 1, 1987 .....	3	4	4
Accrued pension cost .....	<u>\$ (2)</u>	<u>\$ (27)</u>	<u>\$ (8)</u>

For determining the actuarial present value of the projected benefit obligation in fiscal years 1992, 1991, and 1990, the discount rate of 8.5 per cent was used, and the assumed annual rates of increase in future compensation levels for 1992, 1991, and 1990 ranged from 4.8 percent to 9.8 percent. The expected long-term rate of return on plan assets was 11 percent for 1992 and 9 percent for 1991 and 1990.

*Other postretirement benefits* — TVA sponsors a contributory unfunded defined benefit postretirement medical plan that covers substantially all of its employees. TVA's contributions are a flat dollar amount based upon the participants' ages and years of service and certain payments toward the plan costs. In 1991, TVA adopted a new accounting standard for postretirement benefits other than pensions that requires the recognition of these benefits as earned by employees rather than recognized as paid. The provision necessary to establish the liability as of October 1, 1990 amounted to approximately \$243 million of which \$223 million was reflected as a cumulative effect of adopting the new standard and charged to the Power Program. The remaining \$20 million is associated with the Nonpower Program and was recorded by Power as an other long-term receivable to be recovered from future available nonpower funds.

The following sets forth the plan's funded status at September 30:

	<u>1992</u>	<u>1991</u>
	(Millions)	
Accumulated Postretirement Benefit Obligation (APBO):		
Retirees .....	\$124	\$158
Fully eligible active plan participants .....	28	30
Other active plan participants .....	97	76
	249	264
Unrecognized net gain .....	20	—
Accrued postretirement benefit cost .....	<u>\$269</u>	<u>\$264</u>
Net Periodic Postretirement Benefit Cost for these fiscal years included the following components:		
Service cost .....	\$ 7	\$ 6
Interest cost .....	20	21
Amortization of gain .....	(7)	—
Net periodic postretirement benefit cost .....	<u>\$ 20</u>	<u>\$ 27</u>

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

The annual assumed cost trend for covered benefits is 14 percent in fiscal year 1992, decreasing by one-half percent per year reaching seven percent in 2006 and thereafter. For fiscal year 1991 a fixed annual trend rate of 8 percent was assumed. The effect in the change of assumptions on a cost basis was not significant. Increasing the assumed health care cost trend rates by one percentage point in each year will increase the APBO as of September 30, 1992 by \$13 million and the aggregated service and interest cost components of net periodic postretirement benefit cost for 1992 by \$2 million. The weighted average discount rate used in determining the APBO was 8.5 percent. Gains and losses resulting from experience different from that assumed or from changes in assumptions are amortized using a straight-line method over four years.

**8. Major customers**

A Federal agency, in accordance with contract provisions, exercised its right prior to fiscal year 1987 to reduce the amount of electric power to be purchased. An agreement between TVA and the customer was reached in December 1987 whereby the customer's payment obligations are being satisfied through a series of payments to TVA totaling over \$1.8 billion. Scheduled payments included in revenues are \$311 million in fiscal year 1990 and \$160 million each year from 1991 through 1994.

One municipal customer accounts for approximately 10 percent of total power sales and four other municipal customers account for an additional 20 percent of total power sales. All five of these municipal customers have contracts without stated expiration dates, and in no event would the remaining contract term be less than ten years.

**9. Construction expenditures and commitments and contingencies**

Construction expenditures, including capitalized interest, are estimated to be \$2.2 billion, \$2.0 billion, and \$1.8 billion for fiscal years 1993, 1994, and 1995, respectively. These estimates are revised periodically to reflect changes in economic conditions and other factors considered in their determination. Substantial commitments have been incurred for these projects. Approximately \$2.9 billion in long-term commitments, ranging in terms of up to seven years, have been entered into for the purchase of coal. In addition, \$188 million is committed under contracts expiring no later than 2014 for nuclear fuel enrichment and fabrication services.

*Nuclear insurance* — The Price-Anderson Act sets forth an indemnification and limitation of liability plan for the U.S. nuclear industry. All NRC licensees, including TVA, maintain nuclear liability insurance in the amount of \$200 million for each plant with an operating license. The second level of financial protection required is the industry's retrospective assessment plan, using deferred premium charges. The maximum amount of the deferred premium for each nuclear incident is \$63 million per reactor, but not more than \$10 million per reactor may be charged in any one year for each incident. TVA could be required to pay a maximum of \$331 million per nuclear incident on the basis of its five licensed units but it would have to pay no more than \$50 million per incident in any one year. Such amounts include a 5 percent surcharge if additional funds are needed to satisfy public liability claims and are subject to adjustment for inflation.

In accordance with NRC regulations, TVA carries, at each licensed nuclear plant, property and decontamination insurance of \$1.06 billion for the cost of stabilizing or shutting down a reactor after an accident. Some of this insurance may require the payment of retrospective premiums of up to a maximum of approximately \$31 million.

*Acid rain legislation* — The Clean Air Act Amendments of 1990 will result in substantial expenditures for the reduction of sulfur dioxide, nitrogen oxide, and possible toxic emissions at several of TVA's coal fired generating plants. TVA's present compliance strategy to reduce sulfur dioxide includes adding scrubbers to two coal fired units and switching to low-sulfur coal at four units by January 1, 1995. TVA plans to achieve nitrogen oxide emission reductions required before January 1, 1995 by installing low-nitrogen oxide burners at certain units. Annual operating and fuel expenses (excluding depreciation) could increase \$33 to \$49 million

**TENNESSEE VALLEY AUTHORITY**  
**NOTES TO FINANCIAL STATEMENTS — (Continued)**

over current fossil operating expenses for the years 1995 and thereafter. Phase 2 requirements become effective in the year 2000 and the cost of compliance cannot reasonably be determined at this time due to the uncertainties surrounding final EPA regulations, resultant compliance strategy, potential for development of new emission control technologies, and future amendments to the legislation. Requirements for toxic emissions have not been determined by the EPA.

*Litigation* — TVA is a party to various civil lawsuits and claims which have arisen in the ordinary course of its business. It is the opinion of TVA counsel that although the outcome of pending litigation cannot be predicted with any certainty, the ultimate outcome should not have a material adverse effect on TVA's financial position or results of operations.

**10. Certain nonpower projects**

A recent review of the North Alabama coal gasification project status revealed no likely use for the project. The \$113 million cost, exclusive of \$2 million land cost, was retired and charged to the nonpower statement of net expense during 1992.

The construction required to complete the Columbia Dam and Reservoir, a multipurpose project financed by congressional appropriations, has been suspended due to budget restrictions and environmental concerns. The total cost of the project, \$82 million, is carried in construction in progress.



## REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Directors of Tennessee Valley Authority

We have audited the accompanying balance sheets (power program and all programs) of Tennessee Valley Authority as of September 30, 1992 and 1991 and the related statements of operations and retained earnings (power program), net expense and accumulated net expense (nonpower programs) and cash flows (power program and all programs) for each of the three years in the period ended September 30, 1992. These financial statements are the responsibility of Tennessee Valley Authority's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards and *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the power program and all programs of Tennessee Valley Authority as of September 30, 1992 and 1991, and the results of operations of the power program and nonpower programs and cash flows of the power program and all programs for each of the three years in the period ended September 30, 1992 in conformity with generally accepted accounting principles.

COOPERS & LYBRAND

Knoxville, Tennessee  
October 16, 1992

## REPORT OF MANAGEMENT

Management is responsible for the preparation, integrity and objectivity of the financial statements of Tennessee Valley Authority as well as all other information contained in the annual report. The financial statements have been prepared in conformity with generally accepted accounting principles applied on a consistent basis and, in some cases, reflect amounts based on the best estimates and judgments of management, giving due consideration to materiality. Financial information contained in the annual report is consistent with that in the financial statements.

Tennessee Valley Authority maintains an adequate system of internal controls to provide reasonable assurance that transactions are executed in accordance with management's authorization, that financial statements are prepared in accordance with generally accepted accounting principles and that the assets of the corporation are properly safeguarded. The system of internal controls is documented, evaluated and tested on a continuing basis. No internal control system can provide absolute assurance that errors and irregularities will not occur due to the inherent limitations of the effectiveness of internal controls; however, management strives to maintain a balance, recognizing that the cost of such a system should not exceed the benefits derived. No material internal control weaknesses have been reported to management.

Coopers & Lybrand was engaged to audit the financial statements of Tennessee Valley Authority and issue reports thereon. Their audits were conducted in accordance with generally accepted auditing standards. Such standards require a review of internal controls, examination of selected transactions and other procedures sufficient to provide reasonable assurance that the financial statements neither are misleading nor contain material errors. The Report of Independent Accountants does not limit the responsibility of management for information contained in the financial statements and elsewhere in the annual report.

WILLIAM F. MALEC  
*Executive Vice President and  
Chief Financial Officer*

**TENNESSEE VALLEY AUTHORITY**  
**COMPARATIVE STATISTICAL AND FINANCIAL DATA**  
**For the Years Ended September 30**

	<u>1992</u>	<u>1991</u>	<u>1990</u>	<u>1989</u>	<u>1988</u>
Sales (millions of kilowatt-hours) (a)					
Municipalities and cooperatives .....	93,622	92,848	91,636	87,860	86,570
Federal agencies .....	2,204	2,173	2,335	2,337	2,270
Industries .....	16,576	17,437	17,121	16,261	15,120
Electric utilities .....	—	49	265	453	517
	<u>112,402</u>	<u>112,507</u>	<u>111,357</u>	<u>106,911</u>	<u>104,477</u>
Operating Revenues (millions of dollars)					
Electric					
Municipalities and cooperatives .....	4,266	4,272	4,292	4,109	4,100
Federal agencies .....	255	257	413	569	623
Industries .....	472	531	548	526	513
Electric utilities .....	1	8	17	21	26
Other .....	71	68	69	62	60
	<u>5,065</u>	<u>5,136</u>	<u>5,339</u>	<u>5,287</u>	<u>5,322</u>
Dependable Generating Capacity (megawatts) (b)					
Hydro(c) .....	4,885(d)	4,885(d)	4,885(d)	5,201	5,201
Coal .....	15,088	15,249	15,249	15,249	15,249
Nuclear units in service .....	3,361	3,361	2,296	2,296	1,148
Combustion turbine .....	2,284	2,284	2,284	2,284	2,284
	<u>25,618</u>	<u>25,779</u>	<u>24,714</u>	<u>25,030</u>	<u>23,882</u>
System Peak Load (megawatts) .....	21,980	22,081	24,627	20,638	21,343
Percent Gross Generation					
Coal .....	69%	68%	68%	71%	86%
Hydro .....	14%	16%	19%	18%	11%
Nuclear .....	17%	16%	13%	11%	3%
Fuel Cost Per Kilowatt-hour (mills)					
Coal .....	13.3	13.5	13.7	14.1	14.3
Nuclear .....	11.0	10.2	10.0	10.8	13.6
Aggregate Fuel Cost Per kWh Net Thermal Generation .....	12.9	12.9	13.2	13.7	14.4
Revenue Per Kilowatt-hour (mills) (e) .....	43.0	43.6	44.5	44.5	46.8
Fuel Data					
Net Thermal Generation (millions of kilowatt-hours) .....	105,577	98,153	93,595	92,106	86,278
Billion Btu .....	1,069,725	998,934	946,113	925,455	865,876
Fuel expense (millions of dollars) .....	1,360	1,263	1,233	1,261	1,240
Cost Per Million Btu (cents) .....	127.16	126.48	130.36	136.26	143.22
Net Heat Rate .....	10,132	10,177	10,109	10,048	10,036

(a) TVA converted to an end-use wholesale rate structure in May 1992. KWh sales have been adjusted to reflect this change.

(b) Winter net dependable capacity.

(c) Includes 405 megawatts of dependable capacity from the Corps of Engineers projects on the Cumberland River system.

(d) Reflects expiration of TAPOCO exchange agreement.

(e) Excludes DOE settlement payment.